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DR-986 March 1979

A049 430

METEOROLOGICAL DATA REPORT

12831D LANCE MISSILE NO. 2486, ROUND NO. 325 DSL (18 JANUARY 1979)

BY

WSMR METEOROLOGICAL TEAM

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SECURITY CLASSIFICATION OF THIS PAGE (When Date Entered)

| DR-986 4. TITLE (and Substitute Meteorological data rept.) 12831 D LANCE MISSILE BET: 2486, ROUND NEW 325 DSL 7. AUTHOR(a) WSMR METEOROLOGICAL TEAM DA TASK/176657/92D12 D. PERFORMING ORGANIZATION NAME AND ADDRESS 10. PROGRAM ELEMENT, PROJECT OF GRAM PLEMENT, PROJECT OF GRAM PROJECT OF GRAM PLEMENT, PROJECT OF GRAM | -986) COVERED |
|--|------------------|
| 12831D LANCE MISSILE 199: 2486, ROUND 189: 325 DSL AUTHOR(a) WSMR METEOROLOGICAL TEAM Number Number Number Number S. TYPE OF REPORT & PERIOD A PERFORMING ORG. REPORT DA TASK/176657/82D12 | NUMBER |
| 12831 D LANCE MISSILE MOE 2486, ROUND MOE 325 DSL AUTHOR(a) WSMR METEOROLOGICAL TEAM Number Number Number Number | |
| AUTHOR(*) WSMR METEOROLOGICAL TEAM Number Number (18 January 1919) DA TASK/176657/02D12 | |
| WSMR METEOROLOGICAL TEAM Number Number Number | |
| number number (16) | |
| PERFORMING ORGANIZATION WASE AND ADDRESS 10. PROGRAM ELEMENT, PROJECTION NUMBER 10. | 7/02 |
| PERFORMING ORGANIZATION NAME AND ADDRESS 10. PROGRAM ELEMENT, PROJE AREA & WORK UNIT NUMBE. | (17) |
| | CT, TASK |
| | 44-7 |
| 1. CONTROLLING OFFICE NAME AND ADDRESS 12. REPORT DATE | TP. |
| US ARMY ELECTRONICS COMMAND ATMOSPHERIC SCIENCES LABORATORY MARCH 2079 THE NUMBER OF PAGES | |
| WHITE SANDS MISSILE RANGE, NEW MEXICO 46 | |
| MONITORING AGENCY NAME & ADDRESS(If ditterent from Controlling Office) 15. SECURITY CLASS. (of this re | port) |
| US ARMY ELECTRONICS COMMAND UNCLASSIFIED | |
| FT. MONMOUTH, NEW JERSEY | GRADING |
| DISTRIBUTION STATEMENT (of this Report) | |
| APPROVED FOR PUBLIC RELEASE: DISTRIBUTION UNLIMITED. | |
| | |
| A058779 | |
| 7. DISTRIBUTION STATEMENT (of the abetract entered in Block 20, if different from Report) | |
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| | |
| SUPPLEMENTARY NOTES | |
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| | |
| KEY WORDS (Continue on reverse side if necessary and identify by block number) | |
| 1. BALLISTICS | |
| 2. METEOROLOGY 3. WIND | |
| J. WIND | |
| ABSTRACT (Continue on reverse olds If necessary and Identify by block number) | |
| METEOROLOGICAL DATA GATHERED FOR THE LAUNCHING OF 12831D LANCE, | |
| MISSILE NUMBER 2486, ROUND NUMBER 325 DSL, ARE PRESENTED IN TABULAR FO | DRM. |
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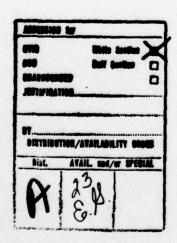
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INTRODUCTION

(AA) 12831 Lance, Missile Number 2486, Round Number 325 DSL, was launched from LC-33, White Sands Missile Range (WSMR), New Mexico, at 0847 HRS MST, 18 January 1979. The scheduled launched time was 0830 HRS MST.

DISCUSSION

Meteorological data were recorded and reduced by the WSMR Meteorological Team, Atmospheric Sciences Laboratory (ASL), WSMR, New Mexico. The data are presented in the following tabulations.

The data are presented in the following tabulations:

| ELEVATION | 3977.30 | FEET/MSL |
|-------------------|---------------|-------------------|
| PRESSURE | 882.0 | MBS |
| TEMPERATURE | 10.1. | °C . |
| RELATIVE HUMIDITY | 58 | × |
| DEW POINT | 2.2 | °ċ |
| DENSITY | 1084 | GM/M ³ |
| WIND SPEED | 19 GUST TO 29 | MPH |
| WIND DIRECTION | 285 | DEGREES |
| CLOUD COVER | 3 | Sc |

TABLE I. SURFACE OBSERVATIONS TAKEN AT LC-33, 0848 HRS MST/18 JANUARY 1979.

| (FEET) | (DEGREES) | (MPH) |
|--------|-----------|-------|
| | | |
| SUR | 270 | 29.0 |
| 100 | 269 | 25.0 |
| 200 | 268 | 24.5 |
| 300 | 267 | 24.5 |
| 400 | 265 | 24.0 |
| 500 | 265 | 25.0 |
| 600 | 265 | 25.5 |
| 700 | 265 | 26.0 |
| 800 | 265 | 26.5 |
| 900 | 266 | 28.5 |
| 1000 | 266 | 30.0 |
| 1100 | 267 | 31.5 |
| 1200 | 267 | 33.0 |
| 1300 | 268 | 33.5 |
| 1400 | 269 | 33.5 |
| 1500 | 270 | 33,5 |
| 1600 | 271 | 33.5 |
| 1700 | 268 | 34.5 |
| 1800 | 264 | 35.0 |
| 1900 | 260 | 36.0 |
| 2000 | 256 | 36.5 |

| HEIGHT (FEET) | DIRECTION (DEGREES) | SPEED (MPH) |
|------------------|------------------------|----------------|
| 2100 | 258 | 37.0 |
| 2200 | 260 | 37.5 |
| 2300 | 262 | 38.0 |
| 2400 | 264 | 38.0 |
| 2500 | 266 | 41.0 |
| 2600 | 267 | 44.0 |
| 2700 | 268 | 47.0 |
| 2800 | 269 | 50.0 |
| 2900 | 270 | 46.5 |
| 3000 | 271 | 43.0 |
| 3100 | 272 | 39.5 |
| 3200 | 273 | 36.0 |
| 3300 | 273 | 37.0 |
| 3400 | 272 | 37.5 |
| 3500 | 272 | 38.0 |
| 3600 | 271 | 38.5 |
| 3700 | 271 | 38.5 |
| 3800 | 271 | 38.5 |
| 3900 | 271 | 38.5 |
| 4000 | 271 | 38.0 |
| 4100 | 271 | 38.5 |

TABLE II. PILOT-BALLOON-MEASURED WIND DATA, RELEASE NO. 1
RELEASED FROM LC-33, AT 0820 HRS MST/18 JANUARY 1979
(AA) 12831 LANCE, MISSILE NO. 2486, ROUND NO. 325 DSL

PIBAL RELEASE POINT WSTM COORDINATES:

X = 486,037.24

Y = 182,350.16 Z = 3977.30

APPROXIMATELY: 1/2 MILE SOUTH OF LAUNCHER.

| HEIGHT (FEET) | DIRECTION (DEGREES) | SPEED (MPH) |
|------------------|---------------------|----------------|
| 4200 | 270 | 38.5 |
| 4300 | 270 | 39.0 |
| 4400 | 269 | 29.0 |
| 4500 | 269 | 39.0 |
| 4600 | 269 | 38.5 |
| 4700 | 269 | 38.0 |
| 4800 | 268 | 37.5 |
| 4900 | 268 | 37.5 |
| 5000 | 267 | 37.0 |
| 5100 | 267 | 37.0 |
| 5200 | 266 | 26.5 |
| 5300 | 266 | 36.5 |
| 5400 | 266 | 36.5 |
| 5500 | 266 | 36.5 |
| 5600 | 266 | 36.5 |
| 5700 | 265 | 36,5 |
| 5800 | 265 | 36.5 |
| 5900 | 265 | 36.5 |
| 6000 | 264 | 36.0 |
| 6100 | 265 | 36.5 |
| 6200 | 266 | 36.5 |
| 6300 | 267 | 37.0 |
| 6400 6500 | 268 268 | 37.0 37.0 |

| DIRECTION (DEGREES) | SPEED (MPH) |
|---------------------|------------------------------------|
| | |
| 267 | 37.0 |
| 266 | 37.0 |
| 265 | 37.0 |
| 266 | 37.5 |
| 267 | 37.5 |
| 268 | 37.5 |
| 268 | 37.5 |
| | |
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| | |
| | (DEGREES) 267 266 265 266 267 268 |

TABLE II. (CONT)

| HEIGHT (FEET) | DIRECTION (DEGREES) | SPEED (MPH) |
|------------------|---------------------|-------------|
| SUR | 270 | 25 |
| 100 | 272 | 20.5 |
| 200 | 274 | 16 |
| 300 | 276 | 11.5 |
| 400 | 277 | 7.0 |
| 500 | 273 | 10.5 |
| 600 | 268 | 14.0 |
| 700 | 264 . | 17.5 |
| 800 | 259 | 20.5 |
| 900 | 257 | 22.5 |
| 1000 | 255 | 24.0 |
| 1100 | 253 | 26.0 |
| 1200 | 251 | 27.5 |
| 1300 | 253 | 29.0 |
| 1400 | 255 | 30.0 |
| 1500 | 257 | 31.5 |
| 1600 | 259 | 32.5 |
| 1700 | 261 | 34.0 |
| 1800 | 263 | 35.5 |
| 1900 | 265 | 37.0 |
| 2000 | 267 | 38.0 |

| HEIGHT (FEET) | DIRECTION (DEGREES) | SPEED (MPH) | |
|------------------|------------------------|-------------|--|
| 2100 | 268 | 38.5 | |
| 2200 | 269 | 39.0 | |
| 2300 | 270 | 39.5 | |
| 2400 | 270 | 40.0 | |
| 2500 | 273 | 41.0 | |
| 2600 | 276 | 41.5 | |
| 2700 | 279 | 42.0 | |
| 2800 | 282 | 42.5 | |
| 2900 | 283 | 43.0 | |
| 3000 | 283 | 43.5 | |
| 3100 | 284 | 44.0 | |
| 3200 | 284 | 44.0 | |
| 3300 | 285 | 44.0 | |
| 3400 | 285 | 44.0 | |
| 3500 | 285 | 44.0 | |
| 3600 | 285 | 44.0 | |
| 3700 | 284 | 44.5 | |
| 3800 | 283 | 44.5 | |
| 3900 | 282 | 44.5 | |
| 4000 | 280 | 44.5 | |
| 4100 | 277 | 44.5 | |

TABLE III. PILOT-BALLOON-MEASURED WIND DATA, RELEASE NO. 2
RELEASED FROM LC-33, AT 0848 HRS MST/18 JANUARY 1979
(AA) 12831 LANCE, MISSILE NO. 2486, ROUND NO. 325 DSL

PIBAL RELEASE POINT WSTM COORDINATES:

X = 486,037.24

Y = 182,350.16 Z = 3977.30

APPROXIMATELY: 1/2 MILE SOUTH OF LAUNCHER.

| HEIGHT (FEET) | DIRECTION (DEGREES) | SPEED (MPH) |
|------------------|---------------------|-------------|
| 4200 | 273 | 44.0 |
| 4300 | 269 | 43.5 |
| 4400 | 265 | 43.0 |
| 4500 | 267 | 43.5 |
| 4600 | 268 | 43.5 |
| 4700 | 269 | 44.0 |
| 4800 | 270 | 44.0 |
| 4900 | 268 | 43.5 |
| 5000 | 266 | 42.5 |
| 5200 | 262 | 40.5 |
| 5300 | 261 | 41.0 |
| 5400 | 260 | 41.5 |
| 5500 | 259 | 42.0 |
| 5600 | 258 | 42.0 |
| 5700 | 258 | 42.0 |
| 5800 | 257 | 42.0 |
| 5900 | 256 | 42.0 |
| 6000 | 255 | 41.5 |
| 6100 | 255 | 41.0 |
| 6200 | 255 | 40.5 |
| 6300 | 255 | 40.0 |
| 6400 | 254 | 39.5 |
| 6500 | 254 | 39.5 |

| HEIGHT (FEET) | DIRECTION (DEGREES) | SPEED (MPH) |
|------------------|------------------------|----------------|
| 6600 | 254 | 39.5 |
| 6700 | 254 | 39.5 |
| 6800 | 254 | 39.5 |
| 6900 | 255 | 39.5 |
| 7000 | 255 | 39.5 |
| 7100 | 255 | 39.5 |
| 7200 | 255 | 39.5 |
| 7300 | 255 | 39.5 |
| 7400 | 255 | 39.0 |
| 7600 | 255 | 38.5 |
| 7700 | 255 | 39.0 |
| 7800 | 255 | 39.0 |
| 7900 | 255 | 39.0 |
| 8000 | 255 | 39.0 |
| 8100 | 256 | 40.0 |
| 8200 | . 256 | 40.5 |
| 8300 | 256 | 41.0 |
| 8400 | 256 | 41.0 |
| 8500 | | |
| 8600 | | |
| 8700 | | |
| 8800 | | |
| 8900 | | |

TABLE III. (CONT)

STATION ALTITUDE 3989.00 FEET MSL 18 JAN. 79 0830 HRS MST ASCENSION NO. 30

*

SIGNIFICANT LEVEL DATA 0180020030 WHITE SANDS TABLE IV.

GEODETIC COORDINATES 32.40043 LAT DEG 106.37033 LON DEG

| REL . HUM. PERCENT | 11 1 1 1 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 |
|--|--|
| EMPERATURE R DEWPOINT EES CENTIGRADE | 76 330 L L L L L L L L L L L L L L L L L L |
| TEMPEF AIR C DEGREES C | 100 1 1 1 1 1 1 1 1 1 0 0 0 0 0 0 0 0 0 |
| GEOMETRIC ALTITUDE MSL FEET | 2989.0 4864.1 1035.2 12130.9 13309.5 13309.5 13309.5 13309.5 18562.9 23171.2 23171.3 23426.6 4085.7 4085. |
| PRESSURE MILLIBARS | 8877 78800 76600 76600 76600 76600 7600 7 |

STATION ALIITUDE 3489.00 FEET MSL 18 JAH. 79 0830 HRS MST ASCENSION NO. 30

SIGNIFICANT LEVEL DATA 0180020030 WHITE SANDS

GEODETIC COORDINATES 32.40043 LAT DEG 106.37033 LON DEG

| REL . HUM. PERCENT | |
|---|--|
| TEMPERATURE AIR DEWPOINT DEGREES CENTIGRADE | |
| PRESSURE GEOMETRIC ALTITUDE ILLIBARS MSL FEET | |
| PRESSURE MILLIBARS | |

| HESSONE | SECMETR ALTITIO | TEMPER |
|----------|--------------------|---------------|
| ILLIBARS | AS. | DEGREES CENTI |
| | 9419. | |
| | .8460 | 56. |
| | 5581. | .09 |
| | 7927. | 58. |
| | 8954. | 56. |
| | 9313. | 52. |
| | 2636. | 56. |
| 30.0 | 78735.4 | |
| | 2310. | 51. |
| | 7531. | # |
| | 8557. | 2 |
| 16.4 | 965. | -43.0 |
| | | |

7

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STATION ALTITUDE 3989.00 FEET MSL 18 JAN. 79 0830 HRS MST ASCENSION NO. 30

UPPER AIR DATA 0180020030 WHITE SANDS TABLE V.

GEODETIC COORDINATES 32.40043 LAT DEG 106.37033 LON DEG

| INDEX OF REFRACTION | 1.000271 | 1.000265 | 1.000260 | 1.000255 | 1.000250 | 1.000245 | 1.000240 | 1.000232 | 1.000228 | 1.000224 | 00022 | 1.000216 | 1.000213 | 1.000209 | 1.000206 | 1.000203 | 1.000200 | 1.000197 | 1.000194 | 1.000187 | 1.000180 | 1.000177 | 1.000173 | 1.000170 | 1.000167 | 1.000164 | 1.000161 | 1.000158 | 1.000156 |
|---|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|-------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| SPEED KNOTS | 19.6 | 25.2 | 30.7 | 36.2 | 38.6 | 36.0 | | 32.8 | | | | | | | | | | | | | | | | | | | | | |
| WIND DATA DIRECTION SF DEGREES(TN) KP | 270.0 | 269-1 | 264.5 | 268.1 | 267.4 | 266.0 | 264.4 | 564.4 | 564.4 | | | | | | | | | | | | | | | | | | | | |
| SPEED OF SOUND KNOTS | 656.5 | 654.8 | 653.2 | 621.9 | 650.6 | 649.3 | 4.849 | 0.649 | 6.749 | 9.049 | 645.3 | 643.9 | 9.749 | 641.0 | 639.4 | 637.8 | 636.1 | 634.4 | 632.6 | 632.3 | 632.4 | 631.7 | 631.0 | 630.3 | 629.4 | 628.3 | 627.2 | 626.1 | 654.9 |
| DENSITY GM/CUBIC METER | 1076.9 | 1062.3 | 1047.9 | 1032.7 | 1017.8 | . 1003-1 | 987.1 | 967.0 | 952.1 | 938.1 | 924.3 | 910.8 | 897.4 | 884.7 | 872.2 | 859.9 | 847.8 | 836.0 | 824.4 | 809.0 | 793.1 | 779.3 | 765.7 | 752.3 | 739.5 | 727.4 | 715.5 | 703.8 | 692.3 |
| REL.HUM. PERCENT | 53.0 | 53.6 | 54.1 | 54.3 | 9.45 | 54.8 | 52.4 | 42.1 | 41.7 | 42.5 | 43.3 | 44.1 | 6.44 | 47.9 | 51.0 | 54.1 | 57.2 | 62.1 | 67.7 | 44.2 | 21.8 | 19.9 | 18.0 | 16.1 | 14.9 | 14.7 | 14.6 | 14.4 | 14.5 |
| MPERATURE DEWPOINT S CENTIGRADE | 0.0 | | -1.4 | -2.3 | -3.3 | -4.2 | -5.5 | 7.7- | -8.7 | -9.5 | -10.2 | -11.0 | -11.8 | -12.2 | -12.7 | -13.3 | -13.9 | -14.2 | -14.6 | -19.8 | -27.5 | -29.0 | -30.5 | -32.1 | -33.5 | -34.4 | -35.2 | -36.1 | -37.0 |
| AIR DEGREES | 10.0 | 9.8 | 7.3 | | 5.1 | 4.0 | 3.4 | 3.9 | • | 1.9 | 8. | 3 | -1.4 | -2.8 | -4.1 | -5.5 | -6.8 | -8.3 | -9.8 | 6-6- | -9.8 | -10.3 | | -11.5 | | -13.1 | | ; | -15.9 |
| PRESSUR _E MILLIBARS | 877.8 | 861.5 | 845.7 | 830.1 | 814.8 | 199.8 | 785.0 | 770.4 | 756.0 | 741.8 | 727.9 | 714.3 | 700.9 | 9.199 | 674.4 | 661.5 | 6.849 | 630.3 | 653.9 | 611.8 | 299.8 | 586.1 | 276.6 | 565.3 | 554.1 | 543.1 | 532.4 | 521.8 | 511.4 |
| GEUMETRIC ALTITUDE MSL FEET | 3989.0 | 4500.0 | 500000 | 5500.0 | 0.0009 | 6500.0 | 100000 | 1500.0 | 800000 | | | ∞ 9500.0 | 1000000 | 10500.0 | - | - | 12000.0 | - | | 13560.0 | | | • | | 160000-0 | | | 17500.0 | |

AX WIND DATA INVALID DUE TO MISSING RAW AZIMUTH AND ELEVATION ANGLES.

STATION ALIITUDE 3989.00 FEET MSL 18 Jan. 79 0830 HRS MST ASCENSION NO. 30

UPPER AIR DATA 0180020030 WHITE SANLS

GEODETIC COONDINATES 32.40043 LAT DEG 106.37033 LON DEG

| INDEX OF REFRACTION | 1.000153 | • | | 1.000146 | 1.000144 | 1.000141 | 1.000139 | 1.000137 | • | 1.000132 | • | 1.000128 | .0001 | .0001 | .00012 | 1.000119 | 1.000117 | 1.000115 | 1.000114 | 1.000112 | 1.000110 | 1.000108 | 1.000106 | 1.000104 | 1.000102 | .00010 | 1.000098 | | • | 1.000092 |
|-----------------------------------|----------|---------|---------|----------|----------|----------|----------|----------|---------|----------|---------|----------|---------|---------|---------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|---------|----------|-------|---------|----------|
| SPEED KNOTS | | | | | | | | | | 94.3 | 83.4 | 73.5 | 63.0 | | | | • | • | • | • | 74.1 | • | • | 8 | 8 | 81.3 | 3. | | 9 | 9.69 |
| DIRECTION SEGREES(TN) | | | | | | | | | | 240.3 | 242.4 | 243.3 | 245.0 | 239.5 | 237.3 | 236.1 | 235.0 | 234.6 | 234.1 | 234.8 | 235.7 | 237.0 | 238.2 | 239.1 | 239.6 | 239.5 | 238.9 | 237.8 | 3 | 237.9 |
| SPEED OF SOUND KNOTS | 623.8 | 622.2 | 620.6 | | 617.2 | | 614.1 | 612.8 | 6111.5 | 610.2 | 600.5 | | | 2.409 | 603.2 | | 599.5 | | | | 595.9 | | 90 | | - | 580.5 | 0 | : | 8 | 583.0 |
| DENSITY SOMETER | 681.0 | 670.7 | 9.099 | 9.059 | | 631.3 | | | 2.009 | 590.7 | 581.6 | 572.6 | 562.0 | | | • | 526.2 | | | | | | | .99 | | | #·0## | 431.7 | | 414.9 |
| REL . HUM. PERCENT | 14.0 | 14.2 | • | + | 14.7 | 14.9 | 14.8 | • | | • | | 14.8 | * | 3.7** | | | | | | | | | | | | | | | | |
| RATURE DEWPOINT ENTIGRADE | -37.9 | -38.8 | -39.8 | 8.04- | -41.8 | -42.8 | -43.9 | 6.44- | -45.9 | • | -47.8 | | -50.9 | -61.2 | | | | | | | | | | | | | | | | |
| TEMPE AIR DEGREES | -16.8 | -18.1 | | | | -23.5 | | -25.8 | | | | • | -31.3 | | | • | -36.3 | | | • | • | -45.6 | | | | | • | | -48.5 | -49.5 |
| PRESSURE MILLIBARS | 501.3 | 491.1 | 481.1 | 471.3 | 461.8 | 452.4 | 443.0 | | 454.8 | 416.0 | 407.3 | 398.7 | 390.5 | 381.9 | 373.7 | 305.6 | 357.7 | 0.050 | 342.4 | 334.8 | 327.4 | 320.1 | 213.0 | 306.0 | 2.662 | 292.4 | 285.7 | 279.5 | 272.9 | 7.002 |
| GEUMETRIC ALTITUDE MSL FEET | 18500.0 | 19000.0 | 19500.0 | 700000 | 20500.0 | 21000.0 | 21500.0 | 22000.0 | 22500.0 | 23000.0 | 43500.0 | 0.000+2 | 24500.9 | 25000.0 | 25500.0 | 2600000 | 26500.0 | 0.00072 | 27500.0 | 28000.0 | | 29000.0 | 29500.0 | 2000000 | 20200.0 | 31000.0 | | - | 32500.0 | |

^{**} AT LEAST ONE ASSUMED RELATIVE HUMIDITY VALUE WAS USED IN THE INTERPOLATION.

WIND DATA INVALID DUE TO MISSING RAW AZIMUTH AND ELEVATION ANGLES. XX

| 3989.00 FEET MSL | 0830 HRS MST |
|------------------|---|
| STATION ALTITUDE | 18 JAN. 79 0830 HRS MST ASCENSION NO. 30 |

UPPER AIR DATA 0180020030 WHITE SANDS

| TES | DEG | DEG |
|----------|----------|------|
| COORDINA | LAT | CON |
| 5000 | 32,40043 | 7033 |
| 710 | 2.40 | 5.37 |
| GEODE. | 3 | 100 |
| | | |

| 11TUDE 33500.0 260.6 34500.0 248.8 | AIR DEGREE -49.7 -49.3 | MPERATURE DEWPOINT S CENTIGRADE | REL . HUM. PERCENT | DENSITY GM/CUBIC METER 406.4 396.3 | O N X | WIND DATA DIRECTION SI DEGREES(TN) KI 239.2 239.2 | MO 100 | JE4 |
|---|---------------------------------------|---------------------------------------|-----------------------|---|--|--|--|--|
| 2000 | 148.0 | | | 356.9 | 584.6 584.6 585.2 | 235.6 235.6 233.4 | 2000 | 00000 |
| 00000 | | | , | 3332 | 582.7 581.5 580.3 579.1 | 229.6 229.6 229.5 | 81.5 80.7 74.6 68.2 | |
| V W V V W V | | | | 319.7 312.8 305.5 296.3 | 577.9 577.4 577.5 577.5 | 200 200 200 200 200 200 200 200 200 200 | 500 500 500 500 500 500 500 500 500 500 | .00007 .00000 .00000 .00000 |
| 75.2 67.2 63.3 59.5 | 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 | | | 250 250 250 250 250 250 250 250 250 | 577.1 570.4 570.4 575.0 | ****** | 550 50 50 50 50 50 50 50 50 50 50 50 50 | |
| 152.1 148.5 141.5 138.2 131.7 | 557. | | | 2444 23944 23944 2236 21364 21364 | 573.0 572.0 572.0 572.3 572.3 572.1 | 20000000000000000000000000000000000000 | 80000000000000000000000000000000000000 | 1.000054 1.000053 1.000052 1.000051 1.000050 1.000049 |

STATION ALTITUDE 3489.00 FEET MSL 18 JAN. 79 0830 HRS MST ASCENSION NO. 30

UPPER AIR DATA 0180020030 WHITE SANDS

GEODETIC COOMDINATES 32.40043 LAT DEG 106.37033 LON DEG

| INDEX OF REFRACTION | 1.000046 | +00000 | +00000 | | | | *00000 | 1.000040 | | | | 1.000036 | | 1.000035 | .00003 | 1.000033 | 1.000032 | 1.000031 | 1.000031 | 1.000030 | | 1.000029 | 1.000028 | • | 1.000026 | 1.000025 | 1.000024 | 1.000024 | 20000 | 1.000023 |
|-------------------------------------|----------|---------|---------|---------|---------|---------|---------|----------|---------|---------|---------|----------|---------|----------|---------|----------|----------|----------|----------|----------|---------|----------|----------|---------|----------|----------|----------|----------|---------|----------|
| DATA W SPEED N) KNOTS | 46.2 | 46.0 | 46.1 | 45.9 | 45.4 | 44.8 | 43.6 | 42.5 | 40.2 | 37.6 | 36.4 | 35.6 | 36.3 | 37.6 | 39.1 | 40.7 | 41.3 | 40.6 | 40.3 | 38.9 | 37.9 | 36.5 | 33.6 | 30.3 | 25.1 | 22.3 | 21.2 | 21.2 | 21.0 | 20.7 |
| WIND DA DIRECTION DEGREES(TN) | 236.3 | 233.9 | 232.2 | 230.8 | 230.0 | 229.3 | 229.5 | 229.8 | 231.3 | 233.2 | 236.7 | 240.7 | 244.2 | 247.4 | 248.0 | 247.7 | 545.6 | 8.04Z | 235.9 | 228.8 | 220.9 | 210.2 | 216.3 | 214.1 | 233.1 | 252.2 | 265.9 | 270.7 | 280.0 | 280.9 |
| SPEED OF SOUND KNOTS | 573.8 | 573.3 | 572.2 | | 569.8 | 568.7 | 567.5 | 566.4 | 565.5 | 564.7 | 564.0 | 564.0 | 564.6 | 565.1 | 565.7 | 560.2 | 566.3 | 565.8 | 565.2 | 264.7 | 564,2 | 563.7 | 563.8 | 567.1 | | 573.1 | 72. | 74. | 7 | : |
| DENSITY SGM/CUBIC METER | 206.5 | 202.0 | 197.9 | 194.0 | | 186.3 | . 182.6 | 179.0 | 175.2 | 171.4 | 167.7 | 163.6 | 159.3 | 155.1 | 151.1 | 147.1 | | 140.3 | 137.1 | 134.0 | 131.0 | 128.1 | 154.9 | 120.5 | 116.3 | 112.4 | 109.9 | 107.5 | 105.1 | 102.8 |
| REL . HUM. PERCENT | | | | | | | | | | | | | | | | | • | | | | | | | | | | | | | |
| ERATURE DEWPOINT CENTIGRADE | | | | | | | | | • | | | | | | | | | | | | | | | | | | | | | |
| TEMPE AIR DEGREES C | -56.2 | | -57.5 | | -59.5 | • | 6.09- | -61.8 | -62.4 | -63.0 | | -63.5 | -63.1 | -62.7 | -62.3 | • | -61.9 | -62.3 | -62.6 | -63.0 | | -63.8 | -63.7 | -61.3 | -58.9 | -26.7 | | | -57.9 | • |
| PRESSURE MILLIBARS | 128.6 | 125.5 | 122.5 | 119.6 | 116.8 | 114.0 | 111.3 | 168.6 | 106.0 | 103.4 | | 98.4 | 0.96 | 93.7 | 91.4 | 89.5 | 87.0 | 6.49 | 82.9 | 6.08 | 78.9 | 77.0 | 75.1 | 73.3 | 517 | 8.69 | | • | 65.0 | ÷ |
| GEUMETRIC ALTITUDE MSL FEET | 4.8500.0 | 0.00064 | 49500.0 | 2000000 | 20200.0 | 21000.0 | 51500.0 | 52000.0 | 52500.0 | 53000.0 | 53500.0 | 24000.0 | 54500.0 | 2500000 | 25500.0 | | 20200.0 | 57000.0 | 27500.0 | 28000.0 | 28200.0 | 0.00065 | 29500.0 | 0.00000 | 0.0000 | 0.00010 | 01200.0 | 0.00029 | 62500.0 | 63000.0 |

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UPPER AIR UATA 0180020030 WHITE SANDS

| ES | EG | DEG |
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| DINAT | AT D | COND |
| COORDINATES | 32-40043 LAT DEG | 033 (|
| | 32.40 | 106.37033 |
| GEODETIC | | 7 |
| | | |

| GEOMETRIC ALTITUDE MSL FEET | PRESSURE HILLIBARS | TEMP AIR DEGREES | ERATURE DEWPOINT CENTIGRADE | REL.HUM. PERCENT | DENSITY GM/CUBIC METER | SPEED OF | WIND DATA DIRECTION S DEGREES(IN) K | SPEED KNOTS | INDEX OF OF RFFRACTION |
|-----------------------------------|-----------------------|------------------------|-----------------------------------|---------------------|------------------------------|----------|-------------------------------------|-------------|---------------------------------|
| 4.1500.0 | | -60 3 | | | | | . 920 | | |
| 64000 | 4.09 | -50.1 | | | 9.001 | 570.0 | 269.5 | 17.0 | 1.000022 |
| 64500.0 | | -40.5 | | | 96.2 | 260 | 258.3 | 14.0 | 20000 |
| 65000.0 | 57.6 | 59 | | | 94.1 | | 243.5 | 12.8 | 1.000001 |
| 65500.0 | 56.2 | 9 | | | 92.0 | 568 | 243.9 | 12.7 | 1.000020 |
| 0.00099 | 54.9 | | | | 89.7 | 568. | 245.9 | 12.6 | 1.000020 |
| 66500.0 | 53.6 | -59.5 | | | . 87.3 | | 257.6 | 15.7 | • |
| 6.000049 | | -59.0 | | | 85.1 | | 260.5 | 20.0 | 1.000019 |
| 67500.0 | | 58. | | | 82.9 | | 271.9 | 24.2 | .00001 |
| 68000.0 | | -58.1 | | | 80.7 | 571.3 | 275.7 | 28.2 | • |
| 0.00580 | 48.6 | -57.2 | | • | 78.5 | | 280.6 | 27.7 | • |
| 0.00069 | | -55.9 | | | 76.2 | | 288.3 | 24.0 | • |
| 0-00569 | | -52.5 | | | 73.3 | | 299.5 | 19.7 | 1.000016 |
| 70000-0 | | -53.2 | | | 71.6 | | 320.0 | 14.9 | 1.000016 |
| 70500.0 | | -53.9 | | | 70.3 | | 346.8 | 13.1 | 1.000016 |
| 71000.0 | 43.2 | 24. | | | 689 | | 1.3 | 12.6 | 1.000015 |
| 71500.0 | | -55.5 | | | 67.5 | | 14.2 | 12.7 | 1.000015 |
| 72000.0 | | -52.9 | | | 66.1 | | 18.2 | 11.6 | 1.000015 |
| 72500.0 | | -56.5 | | | 64.7 | | 21.12 | 10.2 | 1.000014 |
| 73000.0 | | -56.4 | | | .63.2 | | 19.5 | 7.8 | 1.000014 |
| 73500.0 | 36. | • | | | 61.6 | | 1.9 | 4.8 | 1.000014 |
| 24000.0 | 37.5 | 55. | | | 60.1 | 574.6 | 332.6 | 2.7 | 1.000013 |
| 14500.0 | 36. | 2 | | | 58.6 | | 595.9 | 2.4 | 1.000013 |
| 12000-0 | 35. | -24.8 | : | | 57.1 | | 263.3 | 3.0 | 1.000013 |
| 75500.0 | 34.9 | ; | | | 55.7 | | 34.6 | 2.5 | .0000 |
| 76000.0 | 34.1 | ; | | | 54.3 | | 24.0 | 7.2 | .0000 |
| 76500.0 | 33.3 | 3 | | | 52.9 | | 55.1 | | 1.000012 |
| 77000.0 | | ë | | | 51.6 | | 9++6 | 9 | 1.000011 |
| 17500.0 | 31.8 | -52.8 | | | 50.3 | | 53.6 | 19.7 | .00001 |
| 78000.0 | | | | | 0.6% | | 51.3 | | 1.000011 |
| | | | | | | | | | |

THE TRACE OF

| 76500.0 79000.0 79500.0 80500.0 81500.0 82500.0 83500.0 | PRESSURE MILL18ARS 30.3 29.6 29.0 27.6 27.6 27.6 25.8 25.8 25.8 25.8 25.8 25.8 | TEMPERATURE AIR DEWPOINT DEGREES CENTIGRADE -52.0 -51.7 -51.6 -51.5 -51.2 -51.2 -51.2 -51.2 -51.2 | PERCENT. | DENSITY GM/CUBIC GM/CUBI | | DIRECTION DEGREES (TN) 49.1 49.1 53.4 53.4 53.4 53.4 53.4 | DATA SPEED OF STORY SPEED SECTION | INDEX OF REFRACTION 1.000011 1.000010 1.000009 1.000009 1.000009 1.000009 1.000009 |
|--|---|--|----------|--|--|---|---|--|
| 84000.0 85500.0 85500.0 86500.0 87500.0 84000.0 89500.0 89500.0 | 22222222222222222222222222222222222222 | 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 | | 2002 200 200 200 200 200 200 200 200 20 | 584.1 584.1 584.1 584.1 586.0 591.9 591.9 591.9 | 26 11 0 1 t t t t t t t t t t t t t t t t | 22222222222222222222222222222222222222 | 1.000008 1.000008 1.000008 1.000007 1.000007 1.000007 1.000006 1.000006 1.000006 1.000006 1.000006 1.000006 |

STATION ALIITUDE 3989.00 FEET MSL 18 JAN. 79 0830 HRS MŞT ASCENSION NO. 30

MRN SIGNIFICANT LEVEL DATA 0180020030 WHITE SANDS TABLE VI.

GEODETIC COORDINATES 32.40043 LAT DEG 106.37033 LON DEG

| | PRESSURE MILLIBARS | 1.640+1 | 1.910+1 | 2.000+1 | 2.540+1 | 3.000+1 | 4.000+1 | 4.680+1 | 4.760+1 | 5.000+1 | 5.600+1 | 7.000+1 | 7.540+1 | 8.800+1 | 1.000+2 |
|-------------|------------------------|----------|---------|---------|---------|---------|------------|---------|---------|---------|---------|---------|---------|---------|---------|
| TEMPERATURE | AIR DEG C | -43.0 | -42.2 | -44.5 | -51.1 | -51.8 | -56.7 | -52.3 | -56.4 | -58.2 | -60.3 | -56.7 | -64.1 | -61.7 | -63.8 |
| | DEW PT DEP DEG C | 66 | 66 | 66 | 66 | 66 | 66 | 66 | 66 | 66 | 66 | 66 | 66 | 66 | 66 |
| | E-W MPS | ***6666- | -6. | -6- | -11. | -8- | -2. | 10. | 12. | 14. | • | 11: | 10. | 20. | 10. |
| DATA | N-S MPS | ***6666- | -8- | -8- | -6. | -7- | -5- | -5- | + | -1- | ÷ | + | 14. | .0 | 10. |
| DINIM | SPEED | ****6666 | 10. | 10. | 12. | . 11. | ? . | 11: | 13. | . 14. | 7. | 12. | 16. | 21. | 19. |
| | DIRECTION DEG (TN) | ****6666 | 39. | 36. | •09 | *6* | 22. | 294. | 288. | . 275. | 244. | 251. | 516. | 248. | 238. |
| DPCTENTIAL | ALTITUDE DECAMETENS | 2789. | 2080. | 2655. | 2498. | 2390. | 2205. | 2105. | 2094. | 2063. | 1992. | 1821. | 1805. | 1710. | 1631. |
| SE. | 75 | | | | | | | | | | | | | 14 | |

** WIND DATA NOT COMPUTED DUE TO MISSING RAW AZIMUTH AND ELEVATION ANGLES.

| PRESSURE | PRESSURE GEOPOTENTIAL | TEMPE | TEMPERATURE DEMOCINT | REL . HUM. | WIN | IND DATA |
|-----------|-----------------------|-----------|----------------------|------------|---------|----------|
| MILLIBARS | FEET | DEGREES C | ENTIGRADE | | DEGREES | Į, |
| 850.0 | 0 4861. | 7.6 | -1:1- | 54. | 268.7 | 29.5 |
| 800.0 | .0649 0 | 4.0 | -4.2 | 55. | 266.0 | 36.0 |
| 750.0 | | 2.5 | -9.0 | 42. | 264.4 | 31.7 |
| 700.0 | 0 10025. | -1.5 | -11.9 | 45. | 0.6666 | 3999.0XX |
| 650.0 | | -6.7 | -13.8 | 57. | 0.6666 | XX0.6666 |
| 0.009 | | 8-6- | -27.5 | 22. | 0.6666 | XX0.6666 |
| 550.0 | | -12.5 | -33.8 | 15. | 0.6666 | XX0.6666 |
| 2000 | | -16.9 | -38.0 | 14. | 0.6666 | XX0.4666 |
| 450. | | -23.9 | -43.1 | 15. | 0.6666 | XX0.6666 |
| 400.0 | 0 23883. | -30.5 | -48.6 | 15. | 243.1 | 75.2 |
| 350.(| | -37.8 | | | 234.6 | 69.1 |
| 3000 | | -45.7 | | | 239.6 | 9.68 |
| 250. | 34324. | 0.64- | | | 239.2 | 84.7 |
| 200-1 | | -53.5 | | | 231.0 | 57.8 |
| 175.(| | -53.2 | | | 544.4 | 54.0 |
| 150.0 | | -56.7 | | | 246.7 | 53.1 |
| 125.(| | -56.7 | | | 233.7 | 46.0 |
| 1001 | | -63.8 | | | 237.9 | 30.1 |
| 80.0 | | -63.2 | | | 225.8 | 39.4 |
| 70.0 | | -56.7 | | | 546.6 | 22.6 |
| 9.09 | | -59.5 | • | | 266.8 | 16.7 |
| 20.1 | 0 67673. | -58.2 | | | 275.0 | 27.3 |
| 1.04 | | -56.7 | | | 21.7 | 6.6 |
| 30.0 | | -51.8 | | | 7.64 | 21.2 |
| 55.(| | -50.7 | | | 59.5 | 23.8 |
| 20.0 | 0 67122. | -44.5 | | | 36.4 | 10.6 |

XX WIND DATA INVALID DUE TO MISSING RAW AZIMUTH AND ELEVATION ANGLES.

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MRN MANDATORY LEVELS 0180020030 WHITE SANDS TABLE VIII.

6EODETIC COORDINATES 32.40043 LAT DEG 106.37033 LON DEG

| GEOPOTENTIAL | | CNTA | DATA | | | Tombe of the state | |
|------------------------|-----------------------|----------|-----------|-----------|---------------------|--|--------------------|
| ALTITUDE DECAMETEKS | DIRECTION UEG (TN) | SPEED N | MPS S | REW | DEW PT DEP DEG C | AIR DEG C | PRESSURE MILLIBARS |
| 2655. | 36. | 10. | -8- | Ģ | 66 | 144.0 | 2-000+1 |
| 2508. | 59. | 14. | -9- | -10. | 66 | -50.7 | 2.500+1 |
| 2390. | 49. | 11. | -7. | | . 6 | | 1.000.3 |
| 2205. | 22. | | | • | 2.2 | 8.10- | 3.000+1 |
| 2063. | 276 | • | ត់ - | -5- | 66 | -56.7 | 4.000+1 |
| .0003 | | 14. | -1- | 14. | 66 | -58.2 | 5.000+1 |
| .6467 | 267. | | • | 9. | 66 | -59.5 | 6.000+1 |
| 1091 | 250. | 12. | | 11. | 66 | -56.7 | 7.000+1 |
| | 526. | 20. | 14. | 14. | 66 | -63.2 | 8.000+1 |
| 1651 | . 238. | 15. | 10. | 16. | 66 | -63.8 | 1.000+2 |
| 1476 | 234. | 24. | 14. | 19. | 66 | -56.7 | 1.250+2 |
| 1970 | | 27. | 11. | 25. | 66 | -56.7 | 1.500+2 |
| 1,000 | 244 | 30. | 13. | 27. | 66 | -53.2 | 1.750+2 |
| .741 | .167 | 30. | 19. | 23. | 66 | -53.5 | 2.000+2 |
| 1040. | 239. | . * | 22. | .75 | 66 | 0.64- | 2.500+2 |
| 956 | 240. | 46. | 23. | *0* | 66 | -45.7 | 3.000+2 |
| 822. | 235. | 30. | 21. | 29. | 66 | -37.8 | 3.500+2 |
| .97 | 243. | 39. | 17. | 35. | 18 | -30.5 | 4.000+2 |
| 643. | *** 6666 | *** 6666 | *** 6666- | *** 6666- | 19 | -23.0 | 4.50042 |
| 565. | *** 6666 | ****6666 | ***6666- | *** 6566- | 21 | -16.9 | 2.000+0 |
| 493. | *** 6666 | *** 6666 | *** 6666- | *** 6666- | 21 | -12.5 | 5.500+2 |
| 456. | ****6666 | ***6666 | *** 6666- | *** 6666- | 18 | | 2.000.7 |
| 364. | ****6666 | *** 6666 | ****6666- | -0000- | 200 | | 2.000.0 |
| 306. | 84.0000 | 9000 | ** | ++ 0000 | 3 | 1.0- | 6.500+2 |
| 250. | 264 | | 229666 | ***** | 9 | -1.5 | 7.000+2 |
| 101 | 256 | • • • | | 16. | 12 | 2.5 | 7.500+2 |
| 130 | • 907 | 19. | : | 18. | 90 | 0.4 | 8.000+2 |
| 740. | .607 | 15. | • | 15. | 60 | 7.6 | 8.500+2 |
| | | | | | | | - |

** WIND DATA NOT COMPUTED DUE TO MISSING RAW AZIMUTH AND ELEVATION ANGLES.

| NO NO | TITUDE | 3989.00 | FEET | MSL |
|-------|------------|--------------|--------|-----|
| IN. 7 | 18 JAN. 79 | 0630 HRS MST | HRS MS | - |

| ATA | | | | |
|-------------|----------|-------------|-----------|--|
| ANT LEVEL D | 80020029 | WHITE SANDS | TABLE IX. | |
| SIGNIFIC | 010 | HH | TA | |
| | | | | |

GEODETIC COORDINATES 32.40043 LAT DEG 106.37033 LON DEG

| REL.HUM. PERCENT | 100 100 100 100 100 100 100 100 100 100 | |
|-----------------------------------|--|--|
| ATURE EWPOINT ENTIGRADE | 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 | |
| TEMPERA' Air DE' DEGREES CE | 11111111111111111111111111111111111111 | |
| GEOMETRIC ALTITUDE MSL FEET | 3989.0 4128.9 4819.0 5705.5 6777.3 8135.2 9136.2 916128.2 18048.2 18548.5 19217.3 20502.0 34453.1 36948.2 37943.2 37943.2 37943.2 37943.2 37943.2 37943.2 37943.2 37943.2 | |
| PRESSURE MILLIBARS | 8876.3 8876.3 7000.0 | |

STATION ALTITUDE 3989.00 FEET MSL 18 JAN. 79 0630 HRS MST ASCENSION 40. 29

SIGNIFICANT LEVEL DATA 0180020029 WHITE SANDS

GEODETIC COORDINATES 32.40043 LAT DEG 106.37033 LON DEG

TEMPERATURE AIR DEWPOINT DEGREES CENTIGRADE

REL.HUM. PERCENT

PRESSURE GEOMETRIC ALTITUDE MILLIBARS MSL FEET 56061.0 57293.5 60879.7 63993.6 67422.1 73267.0 74963.1 76555.8 76555.8 88.6 50.0 50.0 50.0 38.6 335.0 335.0 135.0 70.0

-62.8

-64.7 -60.0 -56.6 -59.3 -59.3 -55.4 -57.9 -55.0 -43.0

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| STATION AL 18 JAN. 79 ASCENSION | ALIITUDE 3989.00 FEET 79 0630 HRS % | 89.00 FEE 0630 HRS | ET MSL AST | - | UPPER AIR DATA 0180020029 WHITE SANDS TABLE X. | 29 29 29 | | GEODETIC 32.4(| DETIC COOKDINATES 32-40043 LAT DEG 106-37033 LON DEG | |
|---------------------------------------|--|-------------------------------|-----------------------------------|-----------------------|---|----------------------|-------------------------------------|-------------------|--|--|
| GEOMETRIC ALTITUDE MSL FEET | PRESSURE MILLIBARS | TEMPER AIR D DEGREES CE | ERATURE DEWPOINT CENTIGRADE | REL . HUM. PERCENT | DENSITY SEM CUBIC METER | SPEED OF SOUND KNOTS | WIND DA DIRECTION DEGREES(TN) | DATA SPEED | INDEX OF REFRACTION | |
| 3989.0 | 876.3 | 1.6 | 3.1 | 73.0 | 1083.8 | 653.8 | 180.0 | 4.6 | 1.000278 | |
| 40000 | | 7.7 | 3.2 | N | 082. | 654.0 | | | • | |
| 4500.0 | | 9.5 | 2.8 | 64.2 | 057. | 655.7 | | | | |
| 200000 | 844.3 | 9.4 | 1.3 | 0 | 1041.5 | 654.7 | | | 1.000264 | |
| | | 6.8 | : | 62.2 | | 652.8 | | | .0002 | |
| 0.0009 | 813.7 | 5.4 | 7 | | 1014.7 | 651.1 | | | 1.000254 | |
| 6500.0 | 798.6 | 4.3 | -1.1 | 68.1 | . 1000.2 | 649.7 | | | 1.000251 | |
| | 783.8 | 3.1 | -2.1 | 68.5 | 985.8 | 4.849 | | | 1.000246 | |
| | 769.2 | | 3.7 | 65.2 | 971.2 | 647.1 | | | 1.000240 | |
| | 754.8 | | -5.4 | 61.9 | 6.956 | 645.8 | | | 1.000234 | |
| | 7.0.7 | | -8.0 | 51.9 | 9.0%6 | 645.2 | | | 1.000226 | |
| 0.0006 | 726.8 | 9. | -11.7 | 39.4 | 923.8 | 6.449 | | | 1.000218 | |
| | 713.1 | * | -13.9 | 33.0 | 907-1 | 644.7 | | | 1.000213 | |
| - | 2.669 | ٤. | -15.2 | 30.0 | 9.068 | 644.5 | | | 1.000208 | |
| | 6A6.4 | 9 | -17.0 | 27.6 | 870.7 | 643.4 | | | 1.000204 | |
| 11000.0 | 673.4 | -1.6 | -18.8 | 25.3 | 863.1 | 642.3 | | | 1.000199 | |
| | 9.099 | ; | -50.8 | 55.9 | 849.7 | 641.2 | | | 1.000195 | |
| - | 648.1 | 3 | -22.8 | 50.6 | 836.5 | 0.049 | 261.1 | 39.4 | 1.000191 | |
| | 635.8 | 14.0 | -54.9 | 18.2 | 823.5 | 638.9 | 261.4 | 38.8 | 1.000188 | |
| - | 623.6 | -5.4 | -56.2 | 17.6 | 811.0 | 637.6 | 261.7 | 38.5 | • | |
| • | 611.4 | • | -56.6 | 18.8 | 1.664 | • | 262.3 | 40.5 | • | |
| : | 288.5 | | - | 19.9 | 787.4 | 634.5 | 262.8 | 41.9 | | |
| 14500.0 | 587.9 | | -27.4 | 21.1 | 775.8 | 633.0 | 263.5 | 43.2 | 1.000176 | |
| : | 576.4 | • | Ø | 22.3 | 764.5 | 631.4 | 263.7 | 43.9 | 1.000174 | |
| : | 565.2 | 11: | Ø | 23.5 | 753.3 | | 264.1 | 9.44 | .00017 | |
| : | 554.2 | 3 | -29.1 | 24.7 | 742.3 | 626.3 | 203.7 | 44.1 | .0001 | |
| 200 | 543.2 | + | 0 | 23.8 | 731.2 | 626.7 | 263.2 | | .0001 | |
| 17000.0 | 532.3 | 15. | -32.3 | 22.3 | 720.1 | 625.2 | 260.0 | - | 1.000163 | |
| 200 | 521.7 | | -34.1 | 20.7 | .60 | 3 | 256.0 | 9 | .00016 | |
| .000 | 511.3 | 18. | -36.0 | 19.1 | 98. | 622.1 | 253.1 | | 1.000157 | |
| | | | | | | | | | | |

WIND DATA INVALID DUE TO MISSING RAW AZIMUTH AND ELEVATION ANGLES. ×

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STATION ALTITUDE 3989.00 FEET MSL 0630 HRS MST ASCENSION NO. 18 JAN.

UPPER AIR DATA 0180020029 WHITE SANDS

32.40043 LAT DEG 106.37033 LON DEG GEODETIC COORDINATES

1.000134 1.000154 1.000147 .000145 .000142 .000140 .000138 .000136 .000130 REFRACTION INDEX 62.3 61.8 65.0 67.9 71.0 740.77 SPEED WIND DATA DEGREES (TN) 2550 2248.9 2234.9 225.2 225.2 2118.1 217.0 SPEED OF 622.1 620.4 618.7 617.0 623.0 SOUND 655.2 643.9 634.1 624.5 605.8 587.7 6M/CUBIC METER 615.1 596.7 DENSITY REL.HUM. PERCENT TEMPERATURE AIR DEWPOINT DEGREES CENTIGRADE -37.1 -37.1 -37.1 -38.8 -43.2 -42·4 -41.0 -45.1 -18.2 -21.0 -22.4 -23.8 -25.2 -26.6 -28.0 -29.3 -18.2 -19.6 MILLIBARS PRESSURE 501.0 471.4 452.2 481.0 424.8 416.1 3999.1 3999.1 392.3 356.2 356.2 356.2 356.2 356.2 356.2 356.2 356.3 356.3 356.6 343.0 356.6 343.0 19000-0 20500.0 21500.0 23500.0 GEOMETRIC 19500.0 22000-0 22500.0 0.000tz ALTITUDE MSL FEET

231.9 221.4 223.7 226.0 227.5 228.9 229.9 232.2 232.5 232.2 230.5 228.9 615.3 613.5 611.8 610.1 608.3 6.909 603.9 602.5 601.2 599.9 598.6 597.0 595.4 593.8 589.1 595.3 586.5 585.2 4.509 590.7 578.9 551.6 542.6 533.3 524.1 515.1 497.6 560.8 489.2 440.3 472.9 6.494 9.844 457.1 0.4** 6.9** 3.3** 116.0 116.0 116.0 116.0 116.0 116.9 116.9 9.64--46.5 -58.6 -48.1 -51.1 54.4

1.000125

.000119

.000121

.000117 .000115

.000113

.000109

.000111

.000107

.000105

.000104 .000102

.000100

8600000

78.0 78.9 79.2 76.3

₩6 000·

1.000128

WAS USED IN THE INTERPOLATION. AT LEAST ONE ASSUMED RELATIVE HUMIDITY VALUE

20

25000.0

24500.0

Contract of the second

-30.5 -32.9 -33.9

-36.0

27000.0

26500.0

26000.0

-39.6 8.04--42.0

28500.0 290000

29500.0 300000 30500.0 9100000 31500.0 32000-0

28000.0

-44.5 -45.5 -46.5 -47.5 -48.5

20000 293.2 296.5

32500.0

-38.3

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8400000-1

1800000

STATICN ALTITUDE 3989.00 FEET MSL 18 JAN. 79 0630 HRS MST 0630 HRS MST ASCENSION NO.

*

UPPER AIR DATA 0180020029 WHITE SANDS

32.40043 LAT DEG 106.37033 LON DEG GEODETIC COORDINATES

SPEED WIND DATA
DIRECTION SPI
DEGREES(TN) KNO SPEED OF SOUND KNOTS REL.HUM. DENSITY PERCENT GM/CUBIC METER TEMPERATURE AIR DEWPOINT DEGREES CENTIGRADE MILLIBARS PRESSURE GEOMETRIC ALTITUDE MSL FEET M

•000000 .000073 690000 •000000 .000058 .0000055 -00000 +900000 .000063 ..000057 •00000 .000053 .000052 .0000050 6400000 •00000 1.000068 1.000086 +900000 000082 ..000080 •00000 .00000 .00000 .00000 .000062 .00000 .00000 1.00001 REFRACTION 29.8 81.0 58.8 98.2 9.68 72.1 64.3 56.2 59.2 61.8 9.59 58.7 51.7 37.0 29.1 28.4 32.6 86.2 4.96 4.66 41.6 50.3 58.7 55.7 62.4 711.7 245.6 238.0 240.8 240.9 240.8 240.6 240.6 234.8 255.3 235.3 240.8 241.5 243.6 231.9 235.6 242.9 221.9 220.2 219.9 224.1 234.0 245.0 230.7 579.1 580.0 579.2 578.4 577.6 570.9 570.5 576.3 574.0 572.4 578.8 578.1 577.5 576.9 576.3 575.7 576.6 578.0 578.6 568.2 577.4 569.1 581.3 580.0 310.6 303.0 295.5 289.4 283.5 277.6 318.6 265.3 259.7 240.0 401.2 369.2 377.2 353.6 230.1 220.6 344.3 335.3 326.8 254.7 249.8 225.3 385.4 244.9 408.7 393.7 361.4 -52.2 -51.8 -52.1 -53.3 -53.6 -54.2 -55.1 -56.0 -50.5 -52.4 -52.9 -53.4 -53.9 -53.0 -52.6 -53.4 -58.4 -59.1 -59.8 1.09--51.5 -54.3 -54.8 -54.1 216.5 201.7 255.3 243.6 227.0 221.7 200.5 97.0 92.5 983.7 79.4 63.5 55.7 52.0 +8.4 8.44 34.7 232.4 211.4 9.69 41.4 38.0 4.642 34500.0 39500.0 400000 41000.0 41500.0 42000.0 42500.0 43000.0 43500.0 0.000++ 44500.0 33500.0 36500.0 39000.0 45000.0 46000.0 46500.0 34000.0 36000.0 37500.0 9800000 38500.0 40500.0 45500.0 47000.0 35500.0 57000.0

21

THE WAR

| GEONETRIC ALTITUDE MSL FEET | PRESSURE MILLIBARS | TEMF AIR Degrees | MPERATURE DEWPOINT S CENTIGRADE | REL.HUM. PERCENT | DENSITY GM/CUBIC METER | SPEED OF SOUND KNOTS | WIND DA DIRECTION DEGREES(TN) | DATA SPEED SPEED N KNOTS | INDEX OF REFRACTION |
|-----------------------------------|-----------------------|------------------------|---------------------------------------|---------------------|------------------------------|----------------------|-------------------------------------|-----------------------------------|---------------------------|
| *8500.0 | 128.3 | -61.1 | | | 10. | 567.3 | 242.5 | 4.49 | 1.000047 |
| 49000.0 | 125.2 | -60.8 | | | 205.4 | 567.7 | 242.8 | 64.3 | 1.000046 |
| 49500.0 | 122.2 | -60.5 | | | 2000-2 | 568.1 | 243.2 | 63.4 | 1.000045 |
| 5000000 | CD. | | | | | 568.5 | 243.B | 63.5 | |
| - | 116.4 | | | | | 569.0 | 244.7 | 63.1 | 1.000042 |
| 21000.0 | 113.6 | -60.3 | | | 185.9 | 568.3 | 245.5 | 63.4 | 1.000041 |
| - | 0 | -61.0 | | | . 182.0 | 567.4 | 240.4 | 64.2 | 1.000041 |
| 52000.0 | 108.2 | -61.7 | | | 178.2 | 560.5 | 247.1 | 65.0 | 1.000040 |
| 52500.0 | 105.5 | -62.4 | • | | 174.5 | 565.6 | 247.0 | 65.1 | 1.000039 |
| - | 103.0 | -63.1 | | | • | 264.7 | 240.8 | 65.3 | 1.000038 |
| 53500.0 | 100.5 | -63.8 | | | 167.2 | 563.7 | 246.5 | 64.3 | 1.000037 |
| 100 | 1.86 | -63.1 | | | | 564.7 | 240.1 | 62.8 | 1.000036 |
| - | 95.7 | -62.0 | | | 157.9 | 566.1 | 240.5 | 58.9 | 1.000035 |
| | 93.4 | -62.3 | | | 154.2 | 565.7 | 248.2 | 52.2 | 1.000034 |
| 55500.0 | 91 | -63.4 | | | 151.3 | | 250.2 | 45.5 | 1.000034 |
| 56000.0 | 88 | 9.49- | | | 148.4 | | 252.3 | 38.4 | 1.000033 |
| 56500.0 | 96 | -63.0 | | • | 143.6 | 564.7 | 255.2 | 31.3 | 1.000032 |
| | 9 | -61.1 | | | 139.0 | | 252.3 | 27.8 | 1.000031 |
| 57500.0 | 85 | -60.2 | | | 135.0 | | 247e4 | 25.1 | 1.000030 |
| - | 90 | 9.09- | | | 132.0 | | 240.6 | 23.6 | 1.000029 |
| - | 78.6 | • | | | 129.1 | 567.5 | 232.6 | 23.9 | 1.000029 |
| - | 76.7 | -61.3 | | | 126.2 | 567.0 | 224.9 | 54.6 | 1.000028 |
| 59500.0 | 74.9 | | | | 123.4 | | 221.9 | 24.5 | 1.000027 |
| - | 73.1 | -62.1 | | | 120.6 | 565.9 | 218.9 | 24.3 | 1.000027 |
| • | - | -62.5 | | | 117.9 | | 218.5 | 23.3 | 1.000026 |
| - | G | | | | 115.1 | | 220.6 | 21.4 | 1.000026 |
| 61500.0 | - | -61.6 | | | 111.8 | | 223.5 | 19.6 | 1.000025 |
| - | 66.3 | • | | | 108.7 | | 228.9 | 18.4 | 1.000024 |
| 62500.0 | 2.49 | -29.6 | | | 105.6 | 569.3 | 234.9 | 17.3 | 1.000023 |
| 3000 | 77 | | | | 102.6 | 570.7 | 239.6 | 17.2 | 1.000023 |

| ET MSL | MST |
|------------|---------------|
| 3989.00 FE | 0630 HRS MST |
| ALTITUDE | ASCENSION NO. |
| STATION | ASCENSI |

UPPER AIR DATA 0180020029 WHITE SANDS

GEODETIC COOMDINATES 32.40043 LAT DEG 106.37033 LON DEG

| INUEX OF REFRACTION | 1.000022 | 1.000021 | | 1.000020 | 1.000019 | | 8100001 | | 1.000017 | 1.000016 | 1.000016 | 1.000015 | | 1.000015 | 00000 | 1.000014 | 1.000013 | 1.000013 | 1.000013 | 1.000012 | 1.000012 | 1.000012 | _ | 1.000011 | 0 |
|-------------------------------------|----------|----------|---------|----------|----------|---------|---------|---------|----------|----------|----------|----------|-------|----------|-------|----------|----------|----------|----------|----------|----------|----------|------|----------|------|
| D DATA ON SPEED IN) KNOTS | 17.3 | 19.4 | 19.9 | 20.4 | 20.8 | 20.9 | 20.0 | 20.1 | 19.3 | 18.6 | 17.8 | 17.0 | 16.1 | 14.0 | 12.1 | 10.4 | 8.9 | 8.1 | 8.5 | 9.5 | 10.1 | 10.6 | 10.7 | 10.7 | |
| WIND DA DIRECTION DEGREES(TN) | | 250.4 | 251.3 | 253.6 | 255.2 | 257.0 | 26101 | 262.7 | 264.3 | 565.6 | 266.5 | 267.5 | 269.1 | 274.0 | 280.9 | 269.9 | 305.1 | 325.8 | 345.4 | 354.5 | 2.2 | 2.1 | 5.3 | 2.0 | 2.7 |
| SPEED OF SOUND KNOTS | 572.0 | 573.0 | 572.6 | 572.3 | | • | 570.7 | 570.2 | | | | • | | 573.8 | | 574.4 | | | | 573.0 | | | | - | |
| DENSITY S GM/CUBIC METER | 9.66 | 94.6 | 90.3 | 88.3 | 84.3 | 82.4 | 74.7 | 77.0 | 75.3 | 73.3 | 71.4 | 9.69 | 67.8 | 64.3 | 62.6 | 61.2 | 29.9 | 58.7 | 57.5 | 55.9 | 54.3 | 52.8 | 51.5 | 20.4 | 49.5 |
| REL . HUM. PERCENT | | | | | | | | | | | | | | • | | | | | • | | | | | | |
| ERATURE DEWPOINT CENTIGRADE | | | | | | | | | | | | | | | | | | | | | | | | | |
| TEMP AIR DEGREES | -57.6 | -56.8 | -57.1 | -57.5 | | -57.9 | | -58.9 | • | | | | | | | | | | • | | • | • | | | |
| PRESSURE MILLIBARS | 61.7 | 57.4 | | 53.4 | 52.1 | 50.0 | | | | | | | | 0.03 | | | | | 35.5 | | | | | 31.6 | |
| GEONETRIC ALTITUDE MSL FEET | 63500.0 | 65000.0 | 65500.0 | 66500.0 | | 67500.0 | 64500.0 | 69300.0 | | 10000 | | - | - | 72500.0 | - | - | - | | 75000.0 | - | 76000.0 | - | - | 77500.0 | - |

UPPER AIR DATA 0180020029 WHITE SANDS STATION ALTITUDE 3989.00 FEET MSL 18 JAN. 79 0630 HRS MST ASCENSION NO. 29

6E0DETIC COORDINATES 32.40043 LAT DEG 106.37033 LON DEG

| INUEX OF REFRACTION | 1.000011 | 1.000010 | 1.000010 | | 1.000009 | | 1.000009 | 1.000009 | 1.000009 | 1.000008 | 1.000008 | 1.000008 | 1.000008 | 1.000008 | 1.000007 | 1.000007 | 1.000007 | 1.000007 | 1.000007 | 1.000006 | 1.000006 | 1.000006 | 1.000006 | 1.000006 | 1.000006 | 1.000006 | 1.000005 | 1.000005 | 0 |
|---|----------|----------|----------|-------|----------|-------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|-------|
| SPEED KNOTS | 10.4 | 12.5 | 14.1 | 16.0 | 18.2 | 20.5 | 21.2 | 21.3 | 21.7 | 21.5 | 21.5 | 21.6 | 21.6 | 21.6 | 21.4 | 50.6 | 19.9 | 18.7 | 17.3 | 15.8 | 15.7 | 16.3 | 16.9 | 17.5 | 18.1 | 18.7 | 20.3 | 22.1 | 23.9 |
| WIND DATA DIRECTION SI DEGREES(TN) KI | 359.6 | 355.0 | 353.7 | 355.4 | 359.0 | 1.8 | 6.5 | 12.0 | - | • | 30.0 | 35.9 | 38.8 | = | 3 | • | • | | • | 41.5 | | 45.8 | 3 | 44.5 | 45. | 45.7 | 47. | 48. | 49. |
| SPEED OF SOUND KNOTS | 575.4 | 576.4 | 576.9 | 577.4 | 578.0 | 578.5 | 579.0 | 579.6 | 580.1 | 580.6 | 581.1 | 581.7 | 582.2 | 582.7 | 583.2 | 583.7 | 584.3 | 584.7 | 585.1 | 585.5 | 585.8 | 586.2 | 586.5 | 586.9 | 587.3 | 587.6 | 584.0 | 589.4 | 588.7 |
| DENSITY S GM/CUBIC METER | 48.1 | 45.7 | 9.44 | 3 | | • | 40.3 | • | | | 36.5 | 35.6 | 34.7 | 33.6 | | 32.2 | | • | | 29.5 | | 27.8 | 27.2 | 9 | 25.9 | 5.3 | | 4:1 | 3.5 |
| REL.HUM. PERCENT | | | | | | | | | | | | | | | | • | | | | | | | | | | | | | |
| ERATURE DEWPOINT CENTIGRADE | | | | • | | | | | | | | | | | | | | | | | | | | | | | | | |
| TEMP AIR DEGREES | -55.0 | ; | 3 | 3 | | 5 | 5 | - | : | : | | -50.5 | 6 | 6 | | | -48.5 | - | • | | -47.0 | - | • | • | -45.9 | - | -45.3 | -45.1 | -44.8 |
| PRESSURE MILLIBARS | 30.1 | 28.7 | 28.1 | 27.4 | 26.8 | 26.2 | 52.6 | 25.0 | 54.4 | 23.8 | 23.3 | 22.8 | 22.2 | 21.7 | 21.2 | 20.7 | 20.3 | 19.8 | 19.4 | 18.9 | 18.5 | 18.1 | 17.7 | 17.3 | 16.9 | 16.5 | 10.1 | 15.8 | 15.4 |
| GEOMETRIC ALTITUDE MSL FEET | 78500.0 | : | : | : | 91000.0 | : | : | : | 83000. | : | ÷ | 84560. | ÷ | i | ÷ | ė | i | : | | • | ÷ | : | ÷ | : | ÷ | : | • | • | ô |

| MSL | |
|--------------------|---------|
| FEET HOS IN | |
| E 3989.00 FEET MSL | } |
| TUDE 3 | . 29 |
| ALTI | ON NO |
| STATION ALTITUDE | ASCENS! |

| GEODETIC COORDINATES 32.40043 LAT DEG 106.37033 LON DEG | INDEX OF REFRACTION | 1.000005 1.000005 1.000005 1.000005 |
|--|--|--|
| GEODET) | WIND DATA UIRECTION SPEED DEGREES(TN) KNOTS | |
| DATA 29 US | | 23.0 589.1 22.4 589.4 21.9 589.8 21.4 590.2 |
| UPPER AIR DATA 0180020029 WHITE SANUS | DENSITY GM/CUBIC METER | 23.0 |
| | REL . HUM. PERCENT | |
| ET NSL M\$T | TEMPERATURE REL.HUM. DENSITY SPEED OF IR DEWPOINT PERCENT GM/CUBIC SOUND REES CENTIGHADE METER KNOTS | |
| 89.00 FE | DEG | 1111 |
| STATION ALTITUDE 3989.00 FEET MSL 18 JAN. 79 0630 HRS MST ASCENSION NO. 29 | GEOMETRIC PRESSURE TEMPALITUDE AIR AIR WELFEET MILLIBARS DEGREES | 14.7 |
| STATION ALL STATION ALL STATION ASCENSION | GEOMETRIC ALTITUDE MSL FEET | 940000 940000 945000 |

STATION ALTITUDE 3989.00 FEET MSL
18 JAN. 79 0630 HRS MST
ASCENSION NO. 29

MRN SIGNIFICANT LEVEL DATA 0180020029 WHITE SANDS TABLE XI.

GEODETIC COORDINATES 32.40043 LAT DEG 106.37033 LON DEG

| GE! | DO TENTIAL | | - | 744 | | | | | |
|-----|------------------------|-----------------------|---------|-----------|---|---------------------|-----------------------------|-----------------------|--|
| 1 8 | ALTITUDE DECAMETERS | DIRECTION DEG (TN) | SPEED | SIZ | E S S S S S S S S S S S S S S S S S S S | DEW PT DEP DEG C | TEMPERATURE AIR DEG C | PRESSURE MILLIBARS | |
| | 2895. | ***6666 | ***6666 | ****6666- | ****6666- | 66 | 1-63-6 | 1.380+1 | |
| | 2048. | * | 10. | -7- | -7. | 66 | -48.0 | 2.000+1 | |
| | 2385. | 359. | 2. | -5- | • | 66 | -55.0 | 3.000+1 | |
| | 2324. | · · | • | -5- | • | 66 | -54.7 | 3.300+1 | |
| | 2270. | 345. | ; | ; | :- | 66 | -57.9 | 3.560+1 | |
| | 2524. | 285. | • | -5. | • | 66 | -55.4 | 3.860+1 | |
| | 2108. | 264. | .01 | 1 | 10. | 66 | -59.3 | 4.640+1 | |
| | -1902 | 258. | 11: | | 10. | 66 | -58.0 | 5.000+1 | |
| | | 247. | • | ; | .0 | 66 | -56.6 | 6.020+1 | |
| | -6481 | 220. | 11: | • | 7. | 66 | -62.8 | 7.000+1 | |
| | -141 | 250. | 13. | ů. | 13. | 66 | 0.09- | 8.340+1 | |
| | 1703. | 253. | 19. | • | 18. | 66 | 1-64.7 | 8.860+1 | |
| 2 | 1662. | 247. | 29. | 11: | 72 | 66 | -61.6 | 9.480+1 | |
| 6 | 1629. | 246. | 33. | 13. | 30. | 66 | -63.9 | 1.000+2 | |
| | | | | | | | | | |

** WIND DATA NOT COMPUTED DUE TO MISSING RAW AZIMUTH AND ELEVATION ANGLES.

STATION ALTITUDE 3989.00 FEET MSL 18 JAT. 79 0630 MRS MST ASCENSION NO. 29

MANDATORY LEVELS 0180020029 WHITE SANUS TABLE XII.

GEODETIC COORDINATES 32.40043 LAT DEG 106.37033 LON DEG

| 250.4 261.1 | PRES | SURE 6 | PRESSURE GEOPOTENTIAL | TEMP | ERATURE | KEL . HUM. | | O DATA |
|---|-------|--------|-----------------------|---------|------------|------------|--------|------------|
| #815. 9.0 1.7 60. 9999.0 6449. 8163. 8.4 -6.0 60. 9999.0 11918. 11918. 11918. 11918. 11918. 11918. 11918. 11918. 11918. 11918. 11918. 11918. 11918. 11918. 11919 | MILLI | BARS | | DEGREES | CENTIGRADE | renceni | | (TN) KNOTS |
| 6449. 4.4 -1.1 66. 9999.0 81638 -6.0 60. 9999.0 119103.3 -22.4 21. 261.1 139777.9 -27.0 20. 262.8 1617113.7 -29.5 25. 263.5 1617121.3 -40.2 17. 250.4 2390829.2 -46.4 17. 250.4 2390852.4 17. 216.9 240.6 4515752.6 4515752.6 4515752.6 4515752.6 4515752.6 4515752.6 4515755.6 6761756.6 6761756.6 6761756.7 6825755.6 6761756.7 6761767.7 67617 | | 850.0 | 4815. | 9.0 | 1.1 | .09 | 0.6666 | XX0.6666 |
| 81638 -6.0 60. 9999.0 119103.3 -15.2 30. 9999.0 119103.3 -22.4 21. 261.1 1617113.7 -29.5 25. 263.5 1617121.3 -40.2 17. 250.4 2599236.1 -65.6 17. 216.9 2699240.5 17. 216.9 2699240.5 17. 216.9 2699240.5 17. 216.9 2699240.5 17. 216.9 2699240.5 17. 216.9 2699240.5 -40.2 17. 216.9 2699240.5 -40.2 17. 216.9 2699240.5 -65.6 3.0 219.3 2699240.6 -65.6 3.0 242.8 2699253.9 -60.7 216.4 2607253.9 246.4 2607255.6 22.6 2607256.2 226.7 223056.2 226.7 223060.8 246.4 223056.2 256.3 223060.9 -60.7 223060.9 24.0 | | 800.0 | .6119 | *: * | 1:1- | .69 | 0.6666 | XX0.6666 |
| 9980. 11910. 13977. -7.9 -27.0 20. 262.8 1617113.7 -29.5 25. 263.5 1852321.3 -40.2 17. 250.4 2599221.3 -40.2 17. 250.4 2699221.3 -40.2 16. 233.8 2699244.5 -44.5 -52.4 3909652.4 3909652.4 3909652.4 4192453.3 4192453.3 4192453.9 4192453.9 4192453.9 4192453.9 4192453.9 4192453.9 4192453.9 4192453.9 4192855.0 41929.0 219.9 229.1 41929.0 219.9 219.9 219.9 219.9 219.9 219.9 219.9 219.9 219.9 219.9 219.9 219.9 219.9 210.1 | | 750.0 | 6163. | • | -6.0 | .09 | 0.6666 | XX0.6666 |
| 119163.3 -22.4 21. 261.1 1617113.7 -29.5 25. 262.8 1617113.7 -29.5 25. 263.5 1617113.7 -29.5 25. 263.5 16171213.7 -29.5 25. 263.5 25.0 200.0 | | 700.0 | .0866 | | -15.2 | 30. | 0.6666 | XX0.6666 |
| 139777.9 -27.0 20. 262.8 1617113.7 -29.5 25. 263.5 1852318.2 -37.2 17. 250.4 210121.3 -40.2 16. 250.4 2599236.1 -65.6 3.* 231.9 309852.4 17. 218.9 399852.4 25.0 4192453.3 4515757.5 4689660.6 5343660.7 525662.8 526562.8 6761756.2 6763756.2 6763756.2 6763756.2 6763756.2 6763756.2 6763756.2 6763756.2 6763756.2 6763756.2 6763762.8 67637. | | 650.0 | 11910. | -3.3 | -22.4 | 21. | 261.1 | 39.5 |
| 1617113.7 -29.5 25. 263.5 1852318.2 -37.2 17. 250.4 210121.3 -40.2 16. 233.8 2890029.2 -46.4 17. 218.9 269236.1 -65.6 3.4 231.9 3908052.4 17. 219.3 3908052.4 231.9 3908052.4 231.9 3908052.4 231.9 240.6 4192453.3 4515757.5 6067262.6 656.7 656.7 656.7 656.7 656.7 656.7 656.7 656.7 676.7 656.7 67 | | 0.009 | 13977. | -7.9 | -27.0 | 20. | 262.8 | 41.9 |
| 1852318.2 -37.2 17. 250.4 210121.3 -40.2 16. 233.8 2590629.2 -46.4 17. 218.9 269236.1 -65.6 3.0 231.9 3034252.4 17. 218.9 3437952.4 231.9 3908052.4 231.9 3908052.4 231.9 4192453.3 4515757.5 4515960.7 523056.2 5245.6 6261756.2 626.7 | | 550.0 | 16171. | -13.7 | -29.5 | 25. | 263.5 | 43.8 |
| 210121.3 -40.2 16. 233.8 269236.1 -65.6 3.4 230.0 343.4 230.0 343.4 231.9 243.9 243.9 243.9 243.9 243.9 243.9 245.5 253.9 245.9 253.9 245.9 253.9 245.9 255.9 255.0 255. | | 500.0 | 18523. | -18.2 | -37.2 | 17. | 250.4 | 66.2 |
| 2590829.2 -46.4 17. 218.9 2699236.1 -65.6 3.00 231.9 3034244.5 -52.4 3908652.4 4192453.3 4515757.5 4689660.8 5595960.7 6067262.8 656.2 676.4 7223056.2 7823056.2 7823056.2 7823056.2 7823056.2 7823056.2 7823056.2 7823062.8 8208756.2 | | 450.0 | 21101. | -21.3 | -40.5 | 16. | 233.8 | 9.99 |
| 2699236.1 -65.6 3.00 231.9 3034244.5 -52.4 3908052.4 4192453.3 4515757.5 4689660.8 5395960.7 6067262.8 636.7 64.3 | | 400.0 | 23908. | -29.5 | 1.91- | 17. | 218.9 | 73.9 |
| 3044244.5 3437452.4 3908052.4 4192453.3 4192453.3 4192453.3 4192453.3 4192453.4 4192453.4 4192453.4 4192452.4 4192452.4 4192452.4 4192452.4 4192452.4 4192452.4 4192452.4 4192452.4 4192452.4 4192452.4 4192444.4 | | 350.0 | 26992 | -36.1 | -65.6 | 3.00 | 230.0 | 74.0 |
| 3437452.4 219.3 3908e52.4 237.1 4192453.3 4515757.5 240.6 4515757.5 242.8 4515760.8 246.4 5345960.7 238.7 6067262.8 247.2 6761756.2 258.3 7223056.2 258.3 7223056.2 258.3 7223056.2 258.3 7223056.2 74.0 7223056.2 74.0 | | 300.0 | 30442. | 5. 11- | | | 231.9 | 78.3 |
| 3908e52.4 4192453.3 4515757.5 4889e60.8 5343.9 5055960.7 6067262.8 6067262.8 6183555.6 6761756.2 676.1 7223056.2 | | 250.0 | 34374. | -52.4 | | | 219.3 | 6.45 |
| 4192453.3 4515757.5 4689660.8 5343860.7 6067262.8 6067262.8 6761756.2 7223056.2 7223056.2 8208751.9 8607448.0 840.6 11.1 | | 200.0 | 39086 | -52.4 | | | 237.1 | 69.2 |
| 4515757.5 4889660.8 5343863.9 5795960.7 6067262.8 6385756.2 6761756.2 67 | | 175.0 | 41924. | -53.3 | | | 540.6 | 63.7 |
| 4889660.8 242.8 246.4 5195963.9 245.8 246.4 238.7 6067262.8 247.2 219.9 247.2 656.1 -56.2 256.3 259.4 258.3 259.4 258.3 -56.2 256.3 259.4 258.3 -56.2 256.3 259.4 258.3 259.4 258.3 259.4 258.3 259.4 258.3 259.4 258.3 259.4 258.3 259.4 258.3 259.4 258.3 259.4 258.3 259.4 258.3 259.4 258.3 259.4 258.3 259.4 258.3 259.4 258.3 259.4 258.3 259.4 258.3 259.4 258.3 259.4 258.3 258.3 258.3 258.4 258.3 258.3 258.4 258.3 258.4 258.3 258 | | 150.0 | 45157. | -57.5 | | | 245.5 | 29.4 |
| 5795965.9 6067262.8 6067252.8 6383555.6 6761756.2 7223056.2 72 | | 125.0 | *8896. | -60.8 | | | 242.8 | 64.3 |
| 5795960.7 6067262.8 6363555.6 6761756.0 7223056.2 7223056.2 7223056.2 7823755.0 8208751.9 8687446.0 9314744.4 | | 0.001 | 53436. | -63.9 | | | 546.4 | 0.49 |
| 6067262.8 6363555.6 6761758.0 7223056.2 7823755.0 8208751.9 8687448.0 | | 90.0 | 57959. | 60.7 | | | 238.7 | 23.7 |
| 6383555.6 6761758.0 7223056.2 7823755.0 8208751.9 8687448.0 | | 20.0 | 60672. | -62.8 | | | 219.9 | 21.9 |
| 7223056.2 7223056.2 7823755.0 8206751.9 8667448.0 9314744.4 | | 0.09 | 63835. | 9.50 | | | 247.2 | 17.9 |
| 7223056.2 7823755.0 8206751.9 8667448.0 9314744.4 | | 20.0 | 67617. | 0.90- | | | 258.3 | 20.8 |
| 1823755.0 8208751.9 11.1 8687448.0 9314744.4 | | 60.0 | 72230. | -56.2 | | | 274.0 | 14.0 |
| 8687448.0 9314744.4 | | 30.0 | 78237. | -55.0 | | | 359.4 | 10.4 |
| 20.0 6687448.0 | | 25.0 | 82087. | -51.9 | | | 11.1 | 21.3 |
| 15.0 9314744.4 | | 20.0 | 86874. | 0.91 | | | 44.3 | 19.5 |
| | | 15.0 | 93147. | 3.33 | | | | |

AT LEAST ONE ASSUMED RELATIVE MUMIDITY VALUE WAS USED IN THE INTERPOLATION. :

WIND DATA INVALID DUE TO MISSING RAW AZIMUTH AND ELEVATION ANGLES. XX

STATION ALTITUDE 3989.00 FEET MSL 18 JAN. 79 0630 HRS MST ASCENSION NO. 29

MRN MANDATORY LEVELS 0180020029 WHITE SANDS TABLE XIII.

GEODETIC COORDINATES 32.40043 LAT CEG 106.37033 LON DEG

| GEOPOTENTIAL | | WIND | DATA | | | TEMPERATURE | | |
|------------------------|-----------------------|----------|-----------|-------------|---------------------|--------------|-----------------------|--|
| ALTITUDE DECAMETEKS | DIRECTION LEG (TN) | SPEED | A P | RPS | DEW PT DEP DEG C | AIR DEG C | PRESSURE MILLIBARS | |
| 2639. | ****6666 | ***6666 | ****6666- | ****6666- | 66 | 4-44- | 1.500+1 | |
| 2046. | . ** | 10. | -7. | -7. | 66 | -48.0 | 2.000+1 | |
| 2502. | :: | 11: | -11- | -2. | 66 | -51.9 | 2.500+1 | |
| 2385. | 359. | 'n | -5- | .0 | 66 | -55.0 | 3.000+1 | |
| 2505. | 274. | -2 | -1- | 7. | 66 | -56.2 | 4.000+1 | |
| 2061. | 258. | 11: | 2. | 10. | 66 | -58.0 | 5.000+1 | |
| 1940. | 247. | .6 | ; | • | 66 | -56.6 | 6.000+1 | |
| 1649. | 220. | :: | | - | 66 | -62.8 | 7.000+1 | |
| 1767. | 239. | . 14. | • | 10. | 66 | -60.7 | 8.000+1 | |
| 1629. | 246. | 33. | 13. | 30. | 66 | -63.9 | 1.000+2 | |
| 1490. | 243. | 33. | 15. | 29. | 66 | 8.09- | 1.250+2 | |
| 1376. | 246. | 15. | •• | 14. | 66 | -57.5 | 1.500+2 | |
| 1278. | 241. | 33. | 16. | . 58. | 66 | -53.3 | 1.750+2 | |
| | 237. | 30. | 19. | 30. | 66 | -52.4 | 2.000+2 | |
| 1048. | 219. | 26. | 22. | 16. | 66 | -52.4 | 2.500+2 | |
| 926. | 232. | *0* | 25. | 32. | 66 | 5.44- | 3.000+2 | |
| 823. | 230. | 38. | . 54. | 29. | 53 | -36.1 | 3.500+2 | |
| 729. | 219. | 38. | 30. | 24. | 17 | -29.5 | 4.000+2 | |
| 643. | 234. | 35. | 21. | 28. | 19 | -21.3 | 4.500+2 | |
| 565. | 250. | 34. | 11. | 32. | 19 | -18.2 | 5.000+2 | |
| 493. | 564. | 23. | 3. | 22. | 16 | -13.7 | 5.500+2 | |
| 426. | 263. | 24. | ÷ | 21. | 19 | -7.9 | 6.000+2 | |
| 363. | 261. | 20. | ÷ | 20. | 16 | -3.3 | 6.500+2 | |
| 304. | \$\$.6666 ** | *** 6666 | *** 6666- | * *** 6666- | 91 | E. | 7.000+2 | |
| 546. | ****6666 | *** 6666 | *** 6666- | *** 6666- | . 07 | 8. | 7.500+2 | |
| 197. | ***6666 | *** 6666 | ***6666- | ***6666- | 90 | *** | 8.000+2 | |
| 147. | *** 6666 | ****6666 | ***6666- | ***6666- | 07 | 0.6 | 8.500+2 | |
| | | | | | | | | |

.. WIND DATA NOT COMPUTED DUE TO MISSING RAW AZIMUTH AND ELEVATION ANGLES.

| 4051.00 FEET MSL | 0700 HRS MST |
|------------------|-----------------------------|
| ALTITUDE | 18 JAN. 79 ASCENSION NO. |
| STATION | ASCENSIC |

| SIGNIFICANT LEVEL 0180030009 JALLEN TARIFXIV | UAT | | | |
|---|-------------------|------------|--------|-----------|
| | SIGNIFICANT LEVEL | 0180030009 | JALLEN | TARIF XTV |

GEODETIC COORDINATES 33.16712 LAT DEG 106.49511 LON DEG

| PRESSURE | GEUME | TEMP | TURE | REL.HUM |
|----------|-----------|---------|------------|---------|
| MILLIBAR | S MSL FEE | DEGREES | CENTIGRADE | ב ב |
| 873.7 | - | | | |
| 864.3 | 34 | 9.3 | 2.2 | - |
| 850.0 | | | | 3. |
| 817.4 | | | • | 6 |
| 776.0 | 7245.4 | 1.8 | | 0.69 |
| 762.6 | 7705.6 | | 9 | 6 |
| 745.6 | | .7 | 1.4- | - |
| 700.0 | - | | -12.6 | 0.44 |
| h. 199 . | | -4.3 | 9 | |
| | 12417.3 | T.7- | -13.1 | 65.0 |
| | 14507.7 | -11.8 | 6 | + |
| | 16095.7 | -14.4 | 7. | 3. |
| | 13046.5 | 6 | | 0.42 |
| | 18453.0 | 0 | + | .9 |
| | 20479.5 | S | | 3 |
| | 21652.3 | 28. | -43.5 | 3 |
| | 22509.4 | 50 | 1.64- | 3 |
| | 23279.9 | - | | |
| | 23758.3 | 50 | | |
| | 27553.6 | 37. | | |
| | 30322.5 | 0 | | |
| | 34294.4 | 51. | | |
| | 357.7.6 | 53. | • | |
| | 30707.7 | _: | | |
| | 39004.0 | - | | |
| | 40303.7 | - | | |
| | 41859.0 | | | |
| | 429c2.8 | 3 | | |
| 150.0 | 45103.3 | | | |
| | | .0 | | |

| STATION | ALTITUDE | 4051.00 FEET MSL | MSL |
|---------|------------|------------------|-----|
| 18 JAN. | 18 JAN. 79 | 0700 HRS MST | ST |

UPPER AIR CATA 0130030009 JALLEN TABLE XV.

GEODETIC COORDINATES 33.16712 LAT DEG 106.49511 LON DEG

| Z | 260 | 69 | 593 | 193 | 123 | 524 | 15 | 845 | 040 | 230 | 223 | 217 | 212 | 207 | 203 | 201 | 65 | 16 | 93 | 63 | 65 | 19 | 77 | 73 | 69 | 99 | 637 | 60 |
|---|---------|---------|--------|--------|--------|--------|---------|----------|----------|----------|---------|---------|---------|---------|----------|---------|----------|---------|---------|---------|---------|---------|---------|---------|----------|---------|---------|---------|
| INUEX OF REFRACTION | 1.0002 | 1.00026 | 1.0002 | 1.0002 | 1.0002 | 1.0002 | 1.0002 | 1.000248 | 1.000240 | 1.000230 | 1.00022 | 1.00021 | 1.00021 | 1.00020 | 1.00020 | 1.00020 | 1.000159 | 1.0001 | 1.0001 | 1.0001 | 1.00016 | 1.00016 | 1.0001 | 1.0001 | 1.00016 | 1.00016 | 1 | 1. |
| SPEED KNOTS | 111.1 | 11.8 | 12.8 | 14.0 | 17.7 | 24.4 | 28.3 | 30.5 | 33.8 | 39.4 | 45.4 | 9.04 | 38.1 | 36.7 | 37.1 | 38.5 | 37.7 | 36.0 | 34.4 | 32.7 | 31.1 | 32.0 | 33.2 | 34.7 | 36.7 | 38.7 | 40.2 | 41.6 |
| WIND DATA DIRECTION SP DEGREES(IN) KN | 185.0 | 192.8 | 2000 | 200.7 | 214.5 | 221.0 | 232⋅₩ | 545.6 | 247.5 | 240.7 | 247.5 | 249.5 | 252.4 | 9.552 | 258.5 | 261.1 | 203.8 | 566.9 | 269.5 | 271.2 | 275.1 | 272.3 | 271.4 | 270.5 | 269.6 | 200.7 | 267.8 | 260.9 |
| SPEEU OF SOUND KNOTS | 654.4 | 655.4 | 54 | 652.7 | 651.1 | 649.5 | 647.8 | 4.549 | 644.8 | 6.449 | 643.8 | 642.7 | 641.0 | 640.5 | 639.5 | 630.1 | 630.5 | 635.0 | 635.8 | 632.6 | 031.4 | 630.2 | 629.1 | 628.1 | 627.0 | 625.6 | 624.0 | 622.5 |
| DENSITY S GM/CUBIC METER | 1078.7 | 1057.8 | 1042.6 | 1028.0 | 1013.6 | 1000.2 | . 936.7 | 975.4 | 959.0 | 3.046 | 926.0 | 911.8 | 897.7 | 883.4 | 869.4 | 856.4 | 844.5 | | 818.8 | 802.8 | 793.1 | 780.5 | 767.8 | 755.2 | 742.8 | 731.3 | 720.2 | 709.3 |
| REL.HUM. PERCENT | 77.0 | 61.7 | 64.1 | 67.0 | 71.1 | 78.3 | 85.5 | 94.5 | 83.1 | 64.2 | 57.3 | 50.3 | 43.8 | 41.8 | 39.8 | 45.5 | 56.1 | 9.49 | 62.0 | 59.5 | 56.9 | | 48.1 | 41.2 | 34.3 | 31.1 | 28.8 | 26.5 |
| ERATURE DEWPOINT CENTIGRADE | 4.5 | 2.0 | 1.6 | 1.0 | 9. | 5. | £. | 2 | -2.4 | -5.6 | -7.9 | -10.4 | -12.9 | -14.2 | -15.6 | -15.1 | -13.8 | -13.3 | -14.7 | -16.1 | -17.6 | -19.0 | -21.2 | -23.7 | -26.5 | -28.6 | 0 | -52.5 |
| TEMPER AIR D DEGREES CE | 8.0 | | 7.9 | | 5.4 | | | •5 | | .3 | 5 | -1.4 | | • | • | • | • | | -8.8 | | | - | 3 | 3 | -14.2 | 2 | | -17.9 |
| PRESSURE HILLIBARS | 3 | S | - | - | | - | 783.2 | | | 739.9 | | | | | | | | | 622.1 | | | | 574.8 | - | 552.3 | | | 519.8 |
| GEOMETRIC ALTITUDE MSL FEET | 4.051.0 | 4500.0 | 500000 | 5500.0 | 0.0009 | 6500.0 | 700000 | 7500.0 | 800000 | 8500.0 | 0.0006 | 9500.0 | 10000 | 10500.0 | 110000.0 | 11500.0 | 12000.0 | 12500.0 | 13000.0 | 13500.0 | 14000.0 | 14560.0 | 15000.0 | 15500.0 | 160000.0 | 16500.0 | 17000.0 | 17500.0 |

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SIGNIFICANT LEVEL DATA 0180030009 TABLE XVI. JALLEN

33.16712 LAT DEG 106.49511 LON DEG GEODETIC COORDINATES

AIR DEWPOINT DEGREES CENTIGRADE TEMPERATURE PRESSURE GECMETRIC ALTITUDE MILLIBARS MSL FEET

REL . HUM. PERCENT

-47.5 -43.6 -63.3 -58.7 -55.3 -59.2 -57.5 -39.6 -61.2 -50.7 -52.8 -58.3 -53.5 -56.9 -53.3 -65.9 -40.2 +004--60.4 -53.7 102945.2 93850.2 48375.6 70932.9 74877.5 49138.0 50977.3 53542.3 54806.2 60942.9 78727.8 87450.4 56252.1 58301.2 66700.6 4.64649 67971.7 69618.3 113.0 53.0 30.0 88.0 19.4 70.0 43.4 36.0 0.46

| 18 JAN. 79 0700 HRS MST | STATION ALT | ITUDE | 4051.00 FEET MS | |
|-------------------------|-------------|-------|-----------------|--|
| | 18 JAN. 79 | | 0700 HRS MST | |

| ATION AL JAM. 79 CENSION | ATION ALTITUDE 4051.00 FEET MSL JAM. 79 0700 HRS MST ENSION NO. 9 | 51.00 FE 0700 HRS | ET MSL MST | | UPPER AIR DATA 0180030009 JALLEN TABLE XVII. | DATA 109 1. | | GEODETI 33. 106. | GEODETIC COORDI 33.16712 LA 106.49511 LO |
|--------------------------------|---|-----------------------|---|-----------------------|---|----------------------------|---|------------------------|--|
| OMETRIC TITUDE | PRESSUR _E mILLIBARS | TEM AIR DEGREES | METRIC PRESSURE TEMPERATURE FITULE AIR DEWPOINT FEET MILLIBARS DEGREES CENTIGRADE | REL . HUM. PERCENT | DENSITY GM/CUBIC METER | SPEED OF SOUND KNOTS | TEMPERATURE REL.HUM. DENSITY SPEED OF WIND DATA AIR DEWPOINT PERCENT GM/CUBIC SOUND DIRECTION SPEED EGREES CENTIGRADE METER KNOTS DEGREES(TW) KNOTS REF | SPEED KNOTS | INJEX OF REFRACT |

| ITES | 33.16712 LAT DEG | DEG |
|----------------------|------------------|------|
| NION | LAT | LON |
| 000 | 5712 | 1156 |
| TIC | 3.16 | 9.49 |
| GEODETIC COORDINATES | 3 | 10 |
| | | |
| | | |

| GEOMETRIC ALTITUDE MSC FEET | PRESSURE MILLIBARS | TEMF AIR DEGREES | TEMPERATURE R DEWPOINT EES CENTIGRADE | REL.HUM. PERCENT | DENSITY GM/CUBIC METER | SPEED OF SOUND KNOTS | WIND DATA DIRECTION SI DEGREES(TW) KI | SPEED KNOTS | INJEX OF REFRACTION |
|-----------------------------------|-----------------------|------------------------|---|---------------------|------------------------------|----------------------|---|----------------|---------------------------|
| 19000.0 | 488.8 | -22.0 | 4.46- | | 5 | 617.5 | 267.3 | 9.04 | • |
| C000000 | 466 | -24.7 | -34.2 | 40.9 | 657.3 | 619.8 | 265.5 | 39.9 | 1.000151 |
| 20500.0 | | -26.1 | 34.7 | | 647.3 | 612.5 | 263.0 | 42.3 | |
| 21000.0 | *644 | -27.2 | -38.2 | 34.1 | 636.7 | | 200.8 | 45.5 | 1.000143 |
| 21500.0 | *011 | -28.3 | -42.3 | 24.5 | | | 257.3 | 20.1 | 1.000140 |
| 22000.0 | 431. | -29.0 | -45.6 | 18.1 | . 614.8 | | 253.9 | 56.3 | 1.000138 |
| 22500.0 | | -29.4 | -49.1 | - | 603.1 | | 249.2 | 63.4 | 1.000135 |
| 23000.0 | 413 | -28.5 | -26.6 | 4.7** | 586.3 | | 244.3 | 70.1 | 1.000131 |
| 23500.0 | +04 | -28.4 | | | 575.6 | | 241.6 | 75.7 | 1.000128 |
| 0.00042 | 395. | -29.6 | | | 566.1 | | 540.6 | 78.5 | 1.000126 |
| 0.00547 2 | | -30.7 | | | 556.7 | | 240.5 | 80.4 | 1.000124 |
| . 52000.0 | 379 | -31.9 | | | 247.4 | | 239.3 | 80.1 | 1.000122 |
| 25500·0 | 371. | -33.1 | | | 538.3 | | 238.3 | 79.8 | 1.000120 |
| 26000.0 | 363. | -34.3 | | | 529.4 | | 237.0 | 79.3 | 1.000118 |
| 25500.0 | 355. | -35.4 | | • | 520.6 | | 235.7 | 80.1 | 1.000116 |
| 27000.0 | 347. | -36.6 | | | 512.0 | 599.5 | 234.4 | 85.6 | 1.000114 |
| 27500.0 | 240 | -37.8 | | | 503.5 | | 233.4 | 85.4 | 1.000112 |
| 28000.0 | 332. | -38.7 | | | h- 16h | | 232.5 | 88.6 | 1.000110 |
| 29200.0 | 325. | -39.6 | | | 485.4 | 595.4 | 232.0 | 89.0 | 1.000108 |
| 29000-0 | 318.2 | -40.5 | | | 476.5 | 2.465 | 231.7 | 88.7 | 1.000106 |
| 29500.0 | 511. | -41.4 | | | 467.8 | 593.0 | 251.0 | . 86.5 | 1.000104 |
| 200000 | 2004 | -42.3 | | | 29 | 591.9 | 230.3 | 84.0 | 1.000102 |
| 20500.0 | - 167 | -43.3 | | | 451.0 | 290.6 | 229.8 | 81.4 | 1.000100 |
| 21000-0 | 290. | **** | | | 2 | 589.2 | 229.4 | 79.0 | 1.000099 |
| 31500.0 | 284. | -45.5 | | | 34 | 587.8 | 229.9 | 78.0 | 1.000097 |
| 32000.0 | | -45.6 | | | 427.1 | 580.4 | 230.4 | 77.4 | 1.000095 |
| 32500.0 | 271. | -47.7 | | | 419.4 | 585.0 | 230.7 | 78.6 | 1.000093 |
| 33000.0 | | | | | | 583.6 | 231.1 | 79.8 | • |
| 33500.0 | | 6.64- | | | 464-5 | 562.1 | | 80.7 | 1.000090 |

** AT LEAST ONE ASSUMED RELATIVE HUMIDITY VALUE WAS USED IN THE INTERPOLATION.

UPPER AIR LATA 0180030009 JALLEN STATION ALIITUDE 4051.00 FEET MSL 18 JAM: 79 0700 HRS MST ASCENSION NO. 9

GEODETIC COORDINATES 33.16712 LAT DEG 106.49511 LON DEG

| GEOMETRIC ALTITUDE | | AIR | PERATURE DEWPOINT | REL.HUM. PERCENT | DENSITY GM/CUBIC | SPEED OF SOUND | WIND DATA | SPEED | INCEX |
|-----------------------|-----------|-------|----------------------|---------------------|---------------------|----------------|-------------|-------|------------|
| MSL FEET | MILLIBARS | 0 | CENTIGRADE | | METER | KNOTS | DEGREES(TN) | KNOTS | REFRACTION |
| 340000 | 253.4 | -51.0 | | | 397.3 | 580.7 | 232.1 | 81.3 | 1.000088 |
| 34500.0 | | -51.9 | | | 389.8 | 6 | 235.6 | 80.5 | .00008 |
| 35000.0 | 241 | -52.6 | | | | 579.5 | 235.0 | 79.3 | |
| 35500.0 | | -53.4 | | | 374.4 | 577.6 | 230.2 | 76.7 | 1.000083 |
| 36000.0 | 230.7 | -53.0 | | | 365.1 | 578.1 | | 73.8 | .00006 |
| 30500.0 | 225.4 | -51.6 | | | | | 230.5 | 6.69 | |
| 37000.0 | | 50.9 | | | 345.1 | | 235.9 | | • |
| 37500.0 | 215. | -50.8 | | | 337.0 | 581.0 | 235.2 | 64.3 | 1.000075 |
| 3000000 | | -20.6 | | | | 581.2 | 234.8 | | 1.000073 |
| 39560.0 | 205 | 50 | | | 321.2 | | 234.7 | 59.5 | 1.000072 |
| | 200. | 50 | | | • | 581.5 | 234.7 | 57.1 | 0000 |
| 0.00565 3 | 196. | 50 | | | | 581.6 | 234.8 | 54.9 | 1.000068 |
| 400000 | 191. | -50.5 | | | | 281.7 | 233.0 | 52.7 | 1.000067 |
| 40500.0 | 187. | 20 | | | | 561.1 | 534.9 | 51.4 | 1.000065 |
| 41000-0 | 182. | 51 | | | • | 579.4 | 534.9 | 50.5 | 1.000064 |
| 41500.0 | 178. | 53 | | | • | 577.3 | 234.8 | 49.1 | 1.000063 |
| 42000.0 | 174. | 54 | | | • | 576.5 | 234.5 | 46.4 | 1.000062 |
| 42500.0 | | 54 | | | • | 570.8 | 234.1 | 43.6 | 1.000060 |
| 43000.0 | 166. | -53.9 | | | 264.2 | 570.9 | 233.7 | 41.0 | 1.000059 |
| 43500-0 | 162. | 24 | | | • | 575.6 | 233.6 | 39.4 | 1.000058 |
| 0.000++ | 158. | 55 | | | • | 574.3 | 233.5 | 37.7 | 1.000057 |
| 44500.0 | 154. | 26 | | | • | 572.9 | 253.7 | 37.7 | 1.000056 |
| 45000.0 | 151. | 57 | | | | 571.6 | 3 | 39.5 | 1.000054 |
| 45500.0 | 147. | 28 | | | • | 570.7 | 34. | | .00005 |
| 4600000 | 144. | 23 | | | • | 569.9 | 35. | | 1.000052 |
| 40500.0 | 140. | 29 | | | | 569.1 | 35. | | • |
| 47000-0 | 137. | h-09- | | | | 568.2 | 237.0 | | 1.000050 |
| 47500.0 | | -61.3 | | | 220.5 | 567.0 | 39. | 50.9 | |
| 46000.0 | 130. | -62.2 | | | | | 239.5 | | 90 |
| 49500.0 | 127. | -62.5 | | | | 565.4 | 40 | | +00000 |

STATION ALTITUDE 4051.00 FEET MSL 18 JAM. 79 0700 HRS MST ASCENSION NO. 9

UPPER AIR DATA 0180030009 JALLEN

GEODETIC COORDINATES 33-16712 LAT DEG 106-49511 LON DEG

| INCEX OF REFRACTION | 1.000045 1.000044 1.000044 1.000044 1.000044 1.000033 1.000033 1.000033 1.000033 1.000033 1.000024 1.000026 1.000026 1.000026 1.000026 | |
|---|---|--|
| SPEEU KNOTS | | |
| WIND DATA UIRECTION S DEGREES(TH) K | \$ C C C C C C C C C C C C C C C C C C C | |
| SPEED OF SUUND KNOTS | 560 560 560 560 560 560 560 560 | |
| DENSITY S GM/CUBIC METER | | |
| REL.HUM. PERCENT | | |
| AATURE DEWPOINT ENTIGRADE | | |
| TEMPER AIR (DEGREES C | 660 660 660 660 660 660 660 660 660 660 | |
| PRESSUR _e mILLIBARS | 1124 111124 11105 1105 1 | |
| GEOMETRIC ALTITUCE MSL FEET | 0.000666 0.0006666 0.0006666 0.00066666 0.000666666 0.00066666666 | |

STATION ALIITUDE 4051.00 FEET MSL 0180030009
18 JAN. 79 0700 HRS MST JALLEN
ASCENSION NO. 9

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J3.16712 LAT DEG 106.49511 LON DEG

| INJEX OF REFRACTION | 1.000022 | 1.000021 | 1.000021 | 1.000020 | • | 1.000019 | 1.000019 | 1.000018 | 1.000018 | 1.000018 | 1.000017 | 1.000017 | 1.000016 | 1.000016 | 1.000015 | 3.000015 | 1.000015 | 1.000014 | 1.000014 | 1.00001 | 1.000013 | 1.000013 | 1.000013 | 1.000013 | 1.000012 | 1.000012 | 1.000012 | 1.000011 | 1.00001 | |
|---|----------|----------|----------|----------|-------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|---------|----------|----------|----------|----------|----------|----------|----------|----------|---------|-------|
| SPEED KNOTS | 24.8 | 23.7 | 22.3 | 50.6 | 16.2 | 15.8 | 13.6 | 11.4 | 9.4 | 7.6 | 5.9 | 6.2 | 6.9 | 7.9 | 9.5 | 10.4 | 11.1 | 11.6 | 12.0 | 12.2 | 12.3 | 12.5 | 12.5 | 11.7 | 11.2 | 10.01 | 9.5 | 8.5 | 7.9 | 7.7 |
| WIND DATA DIRECTION S DEGREES(TM) N | 265.5 | 564.6 | 263.5 | 561.6 | 559.9 | 257.7 | 250.0 | 258.9 | 261.6 | 260.1 | 276.2 | 293.8 | 307.1 | 314:0 | 317.2 | 319.3 | 319.8 | 319.6 | 313.6 | 350.1 | 320.7 | 321.2 | 341.7 | 315.7 | 314.5 | 316.0 | 317.7 | 317.4 | 321.5 | 350.0 |
| SPEED OF SOUND KNOTS | 573.9 | 574.5 | 574.9 | 573.4 | 572.0 | 570.6 | | | | | | | | | | | | | | | | | | | | | | | | 57 |
| DENSITY GM/CUBIC METER | 97.1 | 9.46 | 92.3 | 5.06 | 88.8 | 87.2 | 5. | 82.9 | 80.7 | 78.8 | 77.1 | 75.3 | 73.1 | 70.8 | 68.6 | 67.2 | 65.7 | 64.3 | 65.9 | . 61.6 | 60.2 | 29.0 | 57.6 | 56.5 | 24.7 | 53.3 | 52.0 | 50.6 | 4.04 | 48.1 |
| REL.HUM. PERCENT | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| TEMPERATURE AIR DEWPOINT DEGREES CENTIGMADE | -56.1 | -55.7 | -55.4 | -56.5 | | -58.6 | | | | | | | | | | | | | | | | | | | | | | 1-54-4 | | |
| PRESSURE ATLL IBARS | | | 57.7 | | | 53.7 | 52.4 | | | | | | | • | | | | | | • | | | | | | | • | 31.6 | | 30.3 |
| GEOMETRIC ALTITULE MSL FEET | 0.00000 | | 6-00009 | | • | | 20. | 07560.0 | : | : | : | 69500 | : | ÷ | ÷ | : | ÷ | : | ÷ | : | ò | : | : | : | : | : | • | 17550.0 | : | : |

UPPER AIR DATA 0150030009 JALLEN

> STATION ALITTUDE 4051.00 FEET MSL 18 JATT. 79 0700 HRS MST ASCENSION WO. 9

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33.16712 LAT DEG 106.49511 LON DEG

| INDEX OF REFRACTION | 1.000010 | 1.000010 | 1.600010 | 1.000010 | 1.000009 | 1.000009 | 1.000009 | 1.000009 | 1.000009 | 1.000008 | 1.000008 | 1.000008 | 1.000008 | 1.000008 | 1.000067 | 1.000007 | 1.000007 | 1.000007 | 1.000007 | 1.000067 | 1.000006 | 1.000006 | 1.000006 | 1.000000 | 1.000006 | 1.000006 | 1.000006 | 1.000005 | 1.000005 | 1.000005 |
|-----------------------------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|-----------|----------|----------|
| SPEED | 7.6 | 3.1 | 6.6 | 11.9 | 13.9 | 16.3 | 18.7 | 21.2 | 23.7 | 26.3 | 29.1 | 31.4 | 31.7 | 32.3 | 32.9 | 31.4 | 29.3 | 27.3 | 25.7 | 25.1 | 24.4 | 23.7 | 22.8 | 21.7 | 50.6 | 19.7 | 20.0 | 20.4 | 20.7 | 22.0 |
| DIRECTION SEGREES(TW) KI | 338.6 | 340.5 | 357.5 | 3.7 | 2.0 | 12.4 | 15.7 | 18.2 | 22.3 | 27.3 | 31.3 | 34.9 | 30.9 | 42.9 | 45.7 | 49.7 | 50.4 | 52.4 | 24.0 | 53.8 | 53.5 | 53.3 | 52.₽ | 55.3 | 51.6 | 51.1 | 51.4 | 51.7 | 52.0 | 51.9 |
| SPEEL OF SOUND KNOTS | 577.9 | 576.3 | 576.7 | 579.2 | 579.0 | 560.0 | 540.5 | 580.9 | 581.3 | 581.3 | 585.2 | 582.6 | 563.1 | 565.5 | 563.9 | 564.4 | 584.6 | 585.2 | 585.6 | 580.0 | 580.4 | 560.6 | 587.2 | 567.0 | 586.0 | 560.4 | 586.8 | 589.2 | 569.6 | 290.0 |
| GENSITY S GM/CUBIC METER | 40.9 | 45.8 | 44.6 | 43.6 | 42.5 | 41.5 | 4.00 | 39.0 | 36.5 | 37.0 | 36.7 | 35.6 | 34.9 | 34.0 | 33.2 | 32.4 | 31.6 | 30.8 | 30.1 | 50.4 | 26.7 | 26.0 | 27.4 | 26.7 | 20.1 | 25.5 | 54.9 | 24.3 | 23.7 | 23.1 |
| REL.HUM. PERCENT | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ERATURE DEWPOINT CENTIGRADE | | | + | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| TEMPE AIR DEGREES C | | | | | • | | | | | -50.1 | | | | 8. | -48.5 | • | • | | -47.2 | | | | • | • | : | -45.0 | : | t · + + - | ; | -43.8 |
| PRESSURE MILLIBARS | 6 | 9 | | : | 1: | • | 3 | 5 | ÷ | 24.0 | 3 | 3. | 5 | = | - | 50.9 | • | 0 | 6 | 6 | 9 | | : | : | : | • | ò | 2 | • | 3 |
| GEGHETRIC ALTITUDE MSL FEET | 79000.0 | | | : | : | : | 9500000 | : | : | : | ÷ | ÷ | 85050. | - | ÷ | 90200.0 | ÷ | : | : | : | : | : | : | : | : | : | : | ÷ | : | |

STATION ALIITUDE 4051.00 FEET MSL 18 JAH. 79 0700 HRS MST ASCENSION 40. 9

UPPER AIR DATA 0180030009 JALLEN

GEODETIC COORDINATES 33.16712 LAT DEG 106.49511 LON DEG

| INUEX OF REFRACTION | 1.000005 | 1.000005 | 1.000005 | 1.000005 | 1.000005 | 1.000004 | 1.000004 | 1.0000004 | 1.000004 | 1.000004 | 1.000004 | 1.000004 | 1.000004 | 1.000004 | 1.000004 | 1.000004 | 1.000003 | 1.000003 | 1.000003 | 1.000003 | 1.000003 | 1.000003 | 1.000003 | 1.000003 | 1.000003 | 1.000003 |
|---|----------|----------|----------|----------|----------|----------|----------|-----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| SPEED KNOTS | 24.1 | 26.2 | 28.2 | 28.4 | 28.6 | 28.8 | 28.9 | 28.8 | 29.5 | 30.1 | 31.1 | 32.0 | 32.8 | 33.7 | 29.7 | 55.6 | 21.5 | 17.5 | | | | | | | | |
| WINC DATA DIRECTION S DEGREES(IN) K | 51.5 | 51.5 | 51.0 | 53.5 | 50.5 | 58.9 | 63.0 | 70.4 | 77.7 | 64.7 | 87.4 | 87.8 | 83.2 | 89.0 | 69.6 | 91.6 | 0.46 | 97.5 | | | | | | | | |
| SPEED OF SOUND KNOTS | 590.5 | 591.3 | 592.1 | 592.9 | 595.7 | 594.5 | 595.3 | 595.3 | 595.2 | 595.2 | 595.1 | 595.1 | 595.0 | 6.463 | 594.9 | 594.9 | 294.7 | 294.7 | 294.6 | 294.6 | 594.5 | 594.5 | 594.5 | £84.0 | 594.4 | 6 |
| DENSITY SOM/CUBIC METER | 22.6 | 22.0 | 21.5 | 20.9 | 20.4 | 19.9 | . 19.4 | 19.0 | 18.6 | 18.2 | 17.8 | 17.4 | 17.0 | 16.7 | 16.3 | 16.0 | 15.6 | 15.3 | 14.9 | 14.6 | 14.3 | 14.0 | 13.7 | 13.4 | 13.1 | 12.8 |
| REL . HUM. PERCENT | | | | | | | | | | | | | | | | | | | | | | | | | | |
| RATURE DEWPOINT ENTIGNADE | | | | | | | | | | | | | | | | | | | | | | | | | | |
| TEMPE AIR DEGREES C | -43.4 | -45.8 | -45.1 | -41.5 | 6.04- | -40.3 | -39.1 | -39.6 | -39.7 | -39.7 | -39.8 | -39.8 | -39.9 | -39.9 | 0.04- | 0.04- | -40.1 | -40.5 | -40.5 | -40.5 | -40.3 | -40.3 | -40.3 | -40-3 | | 4004- |
| PRESSURE KILLIGARS | • | 14.0 | • | • | | 13.3 | | | 'n | 12.2 | | | = | : | | • | 0 | 10.5 | 0 | 8.6 | | • | 9.1 | | 8.8 | • |
| SECNETRIC ALTITUDE SSL FEET | 0.000% | 94500.0 | 850000.0 | 95500.0 | 2000000 | 96500.0 | 97000.0 | 97500.0 | 0.00006 | 94500.0 | 0.00066 | 99500.0 | | 100500.0 | 0.000101 | 101550.0 | 102000-0 | 10-500.0 | 103000.0 | 103500.0 | 104000.0 | 104500.0 | 105000.0 | 105500.0 | T46000.0 | 105500.0 |

MRN SIGNIFICANT LEVEL DATA 01830330009 JABLE XVIII. STATICN ALTITUDE 4051.00 FEET MSL 18 JAN. 79 0700 HRS MST ASCENSION MO. 9

GEODETIC COORDINATES 33.16712 LAT DEG 106.49511 LON DEG

| GEOPCIENTIAL | | CNIM | DATA | | | TEMPERATUR | a d | |
|--------------|-----------|---|-----------|-----------|------------|------------|------------|--|
| ALTITUDE | DIRECTION | SPELD | S-N | E | CEW PT DEP | AIR | PRESSURE . | |
| DECAMETERS | LEG (TN) | MPS | SdW | MPS | | DE6 C | MILLIBARS | |
| . 3241. | ****6666 | ****6666 | ***6666- | ****6666- | 66 | 4.04- | 8-400+0 | |
| 3124. | ***.6666 | ****6656 | *** 6666- | ***6666- | 66 | 2.04- | 1.000+1 | |
| 2943. | • 49 | 15. | -7. | -13. | 66 | -39.6 | 1.300+1 | |
| 2946. | 52. | 12. | -7: | .51 | 66 | -43.6 | 1.500+1 | |
| 2054. | 52. | 14. | -6- | -11- | 66 | -47.5 | 2.000+1 | |
| 2390. | 334. | ; | ; | · N | 66 | -53.3 | 3.000+1 | |
| 2273. | 321. | • | -5- | . 4 | 66 | -56.9 | 3.600+1 | |
| 2154. | 317. | ÷ | -3. | ••• | 66 | -53.5 | 4.340+1 | |
| 2114. | . 297. | . • • • • • • • • • • • • • • • • • • • | -1- | 3. | 66 | -58.3 | 4.620+1 | |
| 2064. | 261. | ٠, | 1. | 5. | 66 | -57.5 | 5.000+1 | |
| 2027. | 258. | ·p | | 7. | 66 | -59.5 | 5.300+1 | |
| 1973. | 263. | 12. | 1. | 11. | 66 | -55.3 | 5.780+1 | |
| 1651. | 252. | 14. | . 4 | 13. | 66 | -58.7 | 7.000+1 | |
| 1773. | 256. | | • | . 4 | 66 | -63.3 | 7.940+1 | |
| 1709. | 260. | •, | .5 | ٧. | 66 | -56.7 | 8.800+1 | |
| 1067 | 256. | ٠, | 1. | 3. | 66 | -52.8 | 9.400+1 | |
| 1627. | 255. | 14. | .5 | 11. | 66 | -50.7 | 1.000+2 | |
| | | | | | | | | |

** WIND DATA NOT COMPUTED DUE TO MISSING RAW AZIMUTH, AND ELEVATION ANGLES.

| ANDATORY LEVELS | 0130039009 | JALLEN | TARIE XIX |
|-----------------|------------|--------|-----------|
| MA | | | |

GEODETIC COOMDINATES 33.16712 LAT DEG 106.49511 LON DEG

| PRESSURE 6 | PRESSURE GEOPOTENTIAL | 1 | TEMPERATURE REMPOLINT | REL. HUM. | WIND DATA | DATA |
|------------|-----------------------|---------|--------------------------|-----------|-------------|-------|
| MILLIBARS | FEET | DEGREES | CENTIGRADE | | DEGREES (TN | KNOTS |
| 650.0 | 4796. | 9.4 | 1.8 | 63. | 197.5 | 12.4 |
| 0.008 | 6459. | 4.1 | 3. | .77. | 2<0.3 | 23.4 |
| 750.0 | 8136. | 4. | -3.5 | 75. | 247.2 | 35.4 |
| 200.0 | -0166 | -2.2 | -12.8 | t. | 252.4 | 38.2 |
| 650.0 | 11857. | -6.2 | -14.1 | 53. | 263.1 | 30.1 |
| 0.009 | 13905. | -10.6 | -17.3 | 57. | 272.7 | 31.4 |
| 550.0 | 16085. | -14.4 | -27.1 | 35. | 209.4 | 37.1 |
| 500.0 | 18429. | -20.5 | -34.9 | 20. | 266.8 | 41.7 |
| 450.0 | 20955. | -27.1 | -38.0 | 34. | 260.9 | 45.4 |
| 400.0 | 23721. | -29.0 | | | 240.9 | 77.5 |
| 350.0 | 26800. | -36.2 | | | 234.3 | 81.8 |
| 300.0 | 30265. | -45.9 | | | 220.0 | 82.4 |
| 250.0 | 34225. | -51.6 | | ٠ | 232.9 | 80.8 |
| 200.0 | 38974. | -50.3 | | | 234.7 | 50.9 |
| 175.0 | 41820. | -54.2 | | | 234.0 | 40.9 |
| 150.0 | 45046. | -58.5 | | | 254.5 | 39.6 |
| 125.0 | 48771. | -61.2 | | | 241.4 | 65.2 |
| 100.0 | 53384. | -50.7 | | | 254.7 | 23.7 |
| 90.0 | 58021. | -63.0 | | | 273.8 | 5.5 |
| 70.0 | 5074c. | -58.7 | | | 251.5 | 27.4 |
| 6.09 | 63939. | -56.0 | | | 265.5 | 24.7 |
| 50.0 | 67721. | -57.5 | | | 261.1 | 9.6 |
| 0.04 | 72376. | -55.0 | | | 319.8 | 11.7 |
| 30.0 | 78390. | -53.3 | | | 333.4 | 7.6 |
| 25.0 | 62272. | 50.7 | | | 8 | 21.7 |
| 20.0 | 67077. | -47.5 | | | 52.2 | 27.5 |
| | 93369. | -43.6 | | | • | 23.2 |
| 10.0 | 102434. | -40.5 | | | | |

| ON A | LITTUDE | 4051.00 FEET MS |
|------|------------|-----------------|
| F 7 | 18 JAP: 79 | JAN SH 0010 |

MRN MANDATORY LEVELS 0180035009 JALLEN TABLE XX.

J3.16712 LAT DEG 106.49511 LON DEG

| GEOPCIENTIAL | | ATAO GNIM | DATA | | | TEMPERATURE | |
|--------------|----------|---------------------------------------|----------|-------------|-------|-------------|-----------|
| ALTITUDE | | SPEED | N-5 | # L | | AIR | PRESSURE |
| DECAMETERS | LEG (TN) | AP. | Soir | Z Z | LEG C | DEG C | MILLIBARS |
| 3122. | ***6666 | ****6666 | ***6666- | *** 6666- | 66 | -40.5 | 1.000+1 |
| 2946. | 52. | 12. | -7- | 5- | 66 | -43.6 | 1.500+1 |
| 2054. | 52. | 14. | .6- | -11. | 66 | -47.5 | 2.000+1 |
| 2508. | 19. | 11. | -11. | ; | 66 | -50.7 | 2.500+1 |
| 2390. | 333. | • • • • • • • • • • • • • • • • • • • | -4- | ٠, | 46 | -53.3 | 3.000+1 |
| 2206. | 320. | • | ٠. ن | ; | 66 | -55.0 | 4.000+1 |
| 2064. | 261. | . . | | • \$ | 66 | -57.5 | 5.000+1 |
| 1949. | 266. | 15. | : | 13. | 66 | -56.0 | 6.000+1 |
| 1651. | 251. | 14. | ., | 13. | 66 | -58.7 | 7.000.7 |
| 1760. | 274. | ٠,٠ | • 0- | | 65 | -63.0 | 8.000+1. |
| 1027. | 255. | 14. | 3. | 12. | 66 | -50.7 | 1.000+2 |
| 1487. | 241. | 34. | 16. | 29. | 66 | -61.2 | 1.250+2 |
| | 234. | 20. | 12. | 17. | 56 | -58.5 | 1.500+2 |
| 1275. | 235. | 24. | 14. | 20. | 66 | -54.2 | 1.750+2 |
| 1183. | 235. | 25. | 17. | 24. | 66 | -50.3 | 2.000+2 |
| 1043. | 233. | 44. | 25. | 33. | 66 | -51.6 | 2.500+2 |
| 922. | 230. | 44. | 27. | 32. | 66 | -45.9 | 3.000+2 |
| 617. | 235. | .74 | 24. | .40 | 66 | -36.2 | 3.500+2 |
| 723. | 241. | 40. | 1.0. | •00 | 66 | -29.0 | 7+000+5 |
| 639. | 261. | 25. | ; | | :: | -27.1 | 4.500+2 |
| 562. | 267. | 21. | 1. | .i. | 4 | -50.5 | 5.000+2 |
| *06* | 269. | 1% | | 19. | 13 | -14.4 | 5.500+2 |
| +54. | 273. | lo. | -1- | 10. | 07 | -10.6 | 6.000+2 |
| 362. | 263. | 20. | | 17. | 90 | -6.2 | 6.500+2 |
| .000 | 252. | 20. | •• | 19. | 11 | -2.2 | 7.000+2 |
| 243. | 247. | 14. | 7. | 17. | *0 | ÷. | 7.500+2 |
| 196. | 220. | 14. | .6 | ÷ | 10 | | 8.000+2 |
| 140. | 197. | 3 | •• | ., | 07 | 4.0 | 8.500+2 |